

# THE MONIST.

## THREE ASPECTS OF MONISM.

IN the manuscript draft\* of the Preface of my forthcoming work in the *Contemporary Science Series* entitled "An Introduction to Comparative Psychology" I have written as follows:

"In a treatise on human psychology it may be possible and advisable to proceed on purely empirical lines and to keep in the background the philosophy of the subject. But in a consideration of comparative psychology such a procedure seems to be neither possible nor advisable. It will conduce to clearness and prevent misconception, therefore, if I state at once that the interpretation of nature which I accept is a monistic interpretation. Now what do I mean by a monistic interpretation? What form of monism is it that I accept?

"First of all I accept a monistic theory of knowledge. The dualist starts with the conception of a subject introduced into the midst of a separately and independently existent objective world. For him the problem of knowledge is how these independent existences, subject and object, can be brought into relation. In the monistic theory of knowledge it is maintained that to start with the conception of subject and object as independent existences is false method, and that the assumed independence and separateness is no-

\* This is only a first draft and will undergo modification, amplification, and revision. I quote it here as it stands in my manuscript. I propose to incorporate some of the matter in the latter part of this article.

wise axiomatic. Starting then from the common ground of *naïve* experience it contends that, prior to philosophising, there is neither subject nor object but just a bit of common practical experience. When a child sees a sweet or when a dog sees a cat, there is a piece of *naïve* and eminently real experience upon which more or less energetic action may follow. It is only when we seek to *explain* the experience that we polarise it in our thought into subject and object. But what logical right have we to say that the subject and object which we thus distinguish in thought are separate in existence? No doubt it is a not uncommon and a not unnatural fallacy to endow with independent existence the distinguishable products of our abstract and analytic thought. The distinguishable redness and scent of a rose may thus come to be regarded as not only distinguishable in thought but also separable in existence. But until it shall be shown that 'distinguishable in thought' and 'separate in existence' are interchangeable expressions, or that whatever is distinguishable is also separable, the conclusion is obviously fallacious. And it is this fallacy which the monist regards as the fundamental error of the dualistic theory of knowledge. While dualism, then, starts with what I deem the illegitimate assumption of the independence of subject and object, the monist, starting from the common ground of experience, looks upon subject and object as distinguishable aspects of that which in experience is one and indivisible. It need only be added that this is a theory of knowledge and of the experience of which knowledge is the outcome. Of that which is not known and not experienced it neither asserts nor denies anything. But accepting as it does the reality of experience it does assert that the aspect which we polarise as objective is just as real, and real in the same sense, as the aspect we polarise as subjective. The reality of object and subject is strictly co-ordinate. And those who hold this view regard as little better than nonsense the assertion that whereas the reality of the subject is unquestionable the reality of the object is a matter that is open to discussion.

"Secondly, I accept a monistic interpretation of nature and of man as a product of natural development. The essence of this view is that man as an organism is one and indivisible (though variously

maimable), no matter how many aspects he may present objectively and subjectively. That the inorganic and organic world have reached their present condition through process of evolution is now widely accepted. But the dualist contends that mind is a separable existence, *sui generis*, and forming no part of the natural world into which it is temporarily introduced. Here the monist joins issue and contends that alike in its biological and its psychological aspect the organism is the product of evolution; that mind is not extra-natural nor supra-natural but one of the aspects of natural existence.

"Thirdly, I accept and have attempted to develop a form of analytic monism. Assuming a concomitance between the nervous changes in some part of the brain and the psychical states experienced by the individual whose brain it is, and assuming further that the nervous changes are transformations of energy, it is suggested that what is under its objective aspect a complex series of transformations of energy in the nervous tissue is under its subjective aspect a complex series of psychical states. It is also suggested that something allied to consciousness, that is to say of the same aspect in nature (let us call it infra-consciousness), may be similarly associated with all manifestations of energy. One of my critics, Dr. A. R. Wallace, has objected that this suggestion is only an awkward restatement of that which Schopenhauer formulated with much greater clearness. I venture to think that this criticism shows a misapprehension of my view or of that of Schopenhauer. The essence of Schopenhauer's conception, as I understand it, is that the underlying activity in the objective world, namely, that force of which energy is a manifestation, though not the only manifestation, is but the objective aspect of that which is the underlying activity in subjective experience, namely, will. This is a monistic conception which I accept; but my modification of Clifford's mind-stuff hypothesis, though an allied conception, is not the same as that of Schopenhauer.

"Now analytic monism by itself is insufficient and partial. It is open to the criticism that while professedly monistic it postulates a dual aspect and is therefore merely dualism in disguise. But this criticism falls to the ground when this analytic monism is taken in

association with the monistic theory of knowledge and the monistic interpretation of nature and of man. My monism must be judged as a whole or not at all. Hence I have taken this opportunity of presenting a brief outline of the form of monism which I accept."

On reading the exceptionally interesting number of *The Monist* for January, it occurred to me that it might be of interest to those who have read these articles to read also what I had written and have above quoted ; and that I might be allowed here to add somewhat to what I have above so briefly and baldly set forth concerning the three aspects of monism.

#### THE MONISTIC THEORY OF KNOWLEDGE.

I believe that as *a theory of knowledge* my own view is not very different from that of Dr. Lewins and Mr. McCrie, but both these writers appear to me to assume that what is adequate as a theory of knowledge suffices as an interpretation of nature. Even as a theory of knowledge these are expressions which appear to be awkward or misleading. Dr. Lewins speaks of "exploding 'thing' altogether" and "substituting our own thoughts for objects of all kinds." He says :

"It is true, or it may be granted, that there is an objective or distal aspect of subjective thought. But that fact, or admission, in no degree invalidates the position that the only objects cognisable are those incorporated with, and by, the subject self, from which all 'things' proceed."

Now if, as I contend, subject and object are of co-ordinate reality, through the polarising action of our thought, I see no reason why "thing" any more than "think" should be exploded ; nor do I see why our own thoughts should be substituted for objects of all kinds rather than objects of all kinds be substituted for our thoughts. If there is an objective or distal aspect of subjective thought, this aspect has a reality strictly co-ordinate with the proximal or subjective aspect of things. I profess that I am unable to see why we should speak of a self from which all things proceed rather than of things from which the self proceeds. And when that clear thinker and elegant writer, Miss Constance Naden, says that "every man is the maker of his own cosmos," she would have done well to add

four monosyllables and to write: Every man is the maker of and is made by his own cosmos. Mr. McCrie uses similar expressions. He says:

"No appulse, or outside stimulus, is really thinkable, as external. It is part of the cosmos which, spider-like, I spin from my internal self. And, when I image such externality, I but create it."

I am not sure that I quite understand what Mr. McCrie means by the first part of this passage. It appears to me that the outside stimulus *is* thinkable as external, and that Mr. McCrie must think it as external in the very act of trying to explain it away. To say that spider-like I spin the cosmos from my internal self is unadulterated idealism, just as Mr. Ward's doctrine, that mind is a property of the substance protoplasm, is unadulterated materialism. As a theory of knowledge I should prefer to say: The self and the cosmos are the co-ordinate products of our abstract and generalising thought on the common matter of experience as polarised into object and subject; or, more briefly, self and cosmos are the polarised aspects of experience as explained through reason.

I do not think, however, that there is at bottom much difference between Dr. Lewins or Mr. McCrie and myself on the monistic theory of knowledge, and Dr. Carus is, I feel sure, with me or—let me say more modestly—I with him. It would seem, however, from his article, that Mr. McCrie would make what is a theory of knowledge into an interpretation of nature. He starts with quotations from Professor Veitch which deal with "the subsistence of force that passes out of my perception," and then proceeds to give this further quotation:

"We distinguish ourselves from the object or percept. . . . Are we entitled on this ground to say that its whole reality is identical with its perceived reality? That it may not subsist apart from the time of our perception, either as it is, or in some form capable again of appearing to us as an object, even an object similar to what we now perceive?"

Professor Veitch, without professing to explain the mode of its existence—nay, further suggesting that we may here be face to face with the "insoluble mystery of being"—assumes that it may so sub-

sist. And Mr. McCrie, after some discussion, closes the section with these words :

*"Here is a subject-object relation admittedly fortuitous and temporary."*

Further on he gives us what he terms the "Open sesame!" of auto-monism.

"Atom, vibration, undulation, mutual attraction, all these *are not*, save as I shape them, and, in the last recess of philosophy, as in the extreme limit of physics, *I am, and there is none else.* 'The cosmic systole and diastole are one with the pulsing throb of my own egoity.'"

Now, the criticism I would make on all this is that what is quite satisfactory as a theory of knowledge is, if I understand Mr. McCrie aright, assumed to be also a satisfactory interpretation of nature. I presume we may take the italicised words "are not" as meaning "are non-existent." I ask Mr. McCrie on what logical grounds he makes this somewhat bold assertion. The theory of knowledge deals with experience, polarises it into subject and object, and so forth. Well and good. But what of that which is, or may be, or may not be, prior to experience and posterior to experience? The theory of knowledge that is modest and knows its business replies, "I do not know. I deal with experience. I can tell you nothing concerning that which is not yet experience or no longer experience. That is a matter of the interpretation of nature." I contend that Mr. McCrie has no logical right to assert or deny anything concerning atom, vibration, and the rest "save as he shapes them" in his experience. He has no logical right to say, "*I am, and there is none else.*" He should sound a more modest note and say: "I am, and what is outside my knowledge I do not know."

The gist of my criticism of Mr. McCrie and those whose views he represents is that though their theory of knowledge is substantially correct, it is by itself insufficient and cannot be regarded as an interpretation of nature or an explanation of that experience with the two aspects of which it deals.

#### THE MONISTIC INTERPRETATION OF NATURE.

There are some excellent folk who believe that philosophy is possible without assumptions. I am not among their number. Hy-

potheses, or assumptions, are as necessary in philosophy as they are in science.

Mr. McCrie appears to regard as necessarily dualistic the assumption that the world, or, to take a concrete example, a stone on a lonely mountain height, may, when no one is perceiving it, exist "either as it is or in some form capable again of appearing to us as object." The reason is obvious. For him knowledge is coextensive with existence. The stone under the given circumstances is not the objective aspect of a bit of experience; therefore, it is either non-existent or *his* monism falls to the ground; hence he proclaims it non-existent. I prefer the other alternative and contend that his monism is insufficient. But I deny that the assumption is necessarily dualistic in the sense that it is necessarily incompatible with a monistic interpretation of nature. For nature is wider than knowledge.

I assume that the stone on that lonely mountain-top exists "either as it is or in some form capable again of appearing to us as object," whether any one is there to perceive it or not. I cannot possibly prove this. I suppose I accept it for this reason; that of the two hypotheses, (a) that it continues to exist in some form or other, whether an object of experience or not, and (b) that it dodges in and out of existence according as it is perceived or not perceived, (a) satisfies me, while (b) satisfies Mr. McCrie. Anyhow, if I cannot prove (a), neither can Mr. McCrie prove (b). I assume, then, that the world which forms the objective aspect of knowledge continues somehow to exist quite independently of its being perceived. How it exists, I do not know, and (I make this confession with bated breath) after mumbling the problem a good deal in my philosophic teething days I have ceased to care.

That there is a nature to interpret is thus an hypothesis or assumption, the sole justification of which is that the hypothesis, though it can never be proved, accords more satisfactorily with the facts of experience than any other assumption. It does not conflict with the monistic theory of knowledge; it merely fills in the gaps of actual experience with "permanent possibilities" of experience. And now we have got our world, the question is how we are to in-

terpret it. Here I am quite content to accept Dr. Carus's definition of *this aspect* of monism.

"Monism is a unitary world-conception."

Here again I am sure that we ought not to be ashamed of stating frankly the hypothetical nature of our view. We assume that what we call nature is coextensive with knowable existence. We assume that far, very far, as we may be at present from anything like a complete or adequate explanation of nature, it is explicable, and that by one method, the method of scientific procedure. Herein lies the essence of our monism under this aspect. If in the wide region of the known and the knowable (we leave the unknowable for those whom it may concern) there be any modes of existence which not only are not explicable, but from their very nature can never be explicable as parts of one self-consistent whole, our monism falls to the ground. We contend that it is this to which the science, the philosophy, the poetry, aye and the religion, too, when purged of superstitious accretions, has been tending throughout the centuries of human progress.

A monistic interpretation of nature, so long as it holds true to the main principle of being throughout self-consistent, allows any amount of individual freedom in the treatment of details. It is characterised not by the possession of a common scientific or philosophic creed, but by a common aim. It appears to me, for example, that in the evolution which sweeps through nature the underlying activity is throughout characterised by the following traits: (1) it is selective; (2) it is synthetic; (3) it tends from chaos to cosmos. And these traits seem to me characteristic alike of inorganic, organic, and mental evolution. Now I dare say there are not half a dozen independent monists who will agree with me in singling out these three traits for especial prominence. But what does that matter? My aim is monistic as is also theirs. And there is plenty of room for many differences and even divergencies of opinion among those who are in search of a self-consistent theory of thought and things.

## ANALYTIC MONISM.

I have already indicated how, in my opinion, a monistic theory of knowledge must be supplemented by a monistic interpretation of nature. Either without the other is incomplete.

I now turn to what may be termed analytic monism. This consists in an analysis of the object of knowledge, or, in other words, of nature, as known and knowable. Now here it is essential quite clearly to grasp the fact that all that we know must, in the act of becoming known, be an object of knowledge. The object of knowledge is not merely the object of sense, but includes also the object of thought. All that we know of the subject, all that we attribute to the self, must, in becoming known, be the object of thought. It is only in reflexion or introspection, which is also retrospection, that this is possible. You cannot analyse any bit of experience at the moment when it is being experienced, you can only look back upon it in a subsequent moment of reflexion. In that subsequent moment it may be polarised into object and subject, and either the objective aspect or the subjective aspect may then be the object of thought. In this way the subjective aspect of experience in moment (*n*) may be object of thought-experience in any subsequent moment (*g*). But never can the subject of experience in any moment be the object of knowledge in the same moment. Hence it follows that without reflexion there can be no knowledge of the subjective aspect of experience. And hence it follows also that our knowledge is always dealing with the self of a moment ago. It is an assumption which can never be proved, but one on the validity of which we all place complete reliance, that the subject is continuous and that the subject of the present moment is practically identical with the subject of a moment ago of which we have knowledge through reflective thought.

Let us take that natural object which we call a man, and let us assume that he is constituted in all essential respects as we are. We analyse him in thought; and we may carry our analysis but a short distance or as far as ever we can. Analyse him a little way

down and we reach the conception of body and mind. It is clear that the concepts of this analysis are closely connected in origin with the concepts reached by the analysis of experience, and that body and mind are analogous to object and subject. Now the fact to which analytic monism should, as it seems to me, stick close is, that body and mind are the products of analysis. What is practically given is the man ; and this man is one and indivisible, though he may be polarised in analysis into a bodily aspect and a conscious aspect. It may be said that this is an assumption. Granted. It is part of the fundamental assumption of the monistic interpretation of nature. According to that assumption or hypothesis the organism in all its aspects is a product of natural evolution. We proceed to study that product. We analyse these aspects. We find that a certain group of them hang together in a special way, and we call them bodily aspects; and we find that a quite different group of them hang together in their special way, and we call them mental aspects. There is no getting on without an hypothesis of some kind, and this is the one which the monist adopts. The dualist says that the organism in its bodily aspect is a product of evolution or of some other process of genesis, and that the mind is implanted therein by some extra-natural process. That is his assumption. The future must decide which assumption is the more reasonable.

According to the monistic assumption, then, the organism is one and indivisible, but is polarisable in analytic thought into a bodily and a mental or conscious aspect. Body and mind, like object and subject, are distinguishable, but not separable. And now we proceed to carry the analysis deeper ; we reach the brain or some part of it ; and here our analysis discloses as one aspect certain forms of nervous change or transformations of energy, and as the other aspect certain phases of consciousness. Note clearly that this is merely through carrying further the same process of analysis, and that, of the products of analysis, neither can claim priority or superior validity over the other. They are strictly co-ordinate : each is as real as the other. The true reality is the man with which the analysis starts : no valid product of the analysis of that man through the application of rational thought can be more real than another.

The question then arises: Given an organism in which analysis gives two aspects, complex energy and complex consciousness, from what have these been evolved by an evolution which is selective, synthetic, and cosmic or determinate? From the nature of the case the evolution of the bodily aspect is that of which alone we can have objective knowledge. We trace the evolution backwards and find, in our interpretation thereof, simpler and simpler organisms until the organic passes into the inorganic. We find the energy less and less complex as we look back through the vista of the past. And what about the other aspect? Does it not seem reasonable to suppose that, no matter what stage we select, analysis would still disclose the two aspects? That with simpler modes of nerve-energy there would go simpler modes of consciousness, and that with infra-neurial modes of energy there would be infra-consciousness or that from which consciousness, as we know it, has arisen in process of evolution? This is admittedly speculative. But is it illogical?

Let us return, however, from this speculative excursion to emphasise again the fact that for monism the organism in practical experience is the starting-point; that it is one and indivisible though it has different aspects which may be distinguished in analytic thought; and that these aspects are strictly co-ordinate; neither is before nor after the other.

Now, opposed to such a view are (1) the hypothesis of materialism according to which the body is the real substance, the mind being one of its properties, and (2) the hypothesis of what may be termed psychism, which is, in the words of Charles Kingsley, "that your soul makes your body, just as a snail makes its shell," that mind is the reality of which the body is merely the phenomenal aspect. I welcome Dr. Carus's definition of such theories:

"They are pseudo-monistic, and to distinguish them from true monism, we propose to call them *henisms*, or single-concept theories."

They are opposed to monism, as I interpret it, in that they depart from the cardinal principle of monism, which is that practical experience is the fountain-head of reality. They give to one product of the analysis of this experience a validity superior to that of another product of this analysis. No doubt such a procedure is ad-

missible. The henist has a perfect right to say this is my hypothesis or assumption. You must not reject it simply because it is a different assumption from that which you make yourself. Quite so. It is because I regard it as a different assumption that I welcome Dr. Carus's term henism. Henism must be judged on its merits.

I cannot attempt to discuss Mr. Lester F. Ward's henistic theory of mind. It appears to me to be a restatement of materialism. I have myself passed through a phase of materialistic thought; but I have since then weighed it with due care and found it wanting.

In conclusion I must repeat that, in my judgment, the full strength of monism is not apparent until we view it in its three phases as a theory of knowledge, an interpretation of nature, and an hypothesis which correlates energy and consciousness. Monism must be judged as a whole or not at all. Its cardinal tenets are: that nature is one and indivisible and is explicable on one method, the method of reason; that experience is one and indivisible, though we may distinguish its subjective and objective aspects; that man is one and indivisible, though our analysis may disclose two strongly contrasted aspects, body and mind. It contends that man in both aspects, biological and psychological, is the product of an evolution that is one and continuous; and, combining the results of its theory of knowledge with those of its analysis of man, it identifies the mind, as a product of evolution, with the subject, as given in experience.

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## THE PARLIAMENT OF RELIGIONS.

THE Parliament of Religions was the name of a drama, played, not in a church, but in a "Palace of Art," with pagan gods in marble watching the performance and wondering what the lesson of it was. This Parliament was a genial transmutation of religious animosities into social friendships, but it was neither Pentecost nor Babel, although it had resemblances to both. It was discords looking for concord among the very same brambles where their enmities grew; a congregation of wanderers in the desert of dead creeds, searching the skies for another pillar of fire and a miraculous pilot-cloud. It was like the old monks praying in gloomy cells for light, and refusing to go outside the cloisters into the wholesome world where the blessed sunshine was.

The advertised object of the Parliament was :

"To unite all religion against all irreligion ; to make the golden rule the basis of this union ; to present to the world the substantial unity of many religions in the good deeds of the religious life."

This call, while rather indefinite, was construed liberally, as it should have been, because "all religion" may mean a syndicate of all the sects, or it may signify all the virtues in their abstract form, for the meaning of the word "religion" has been much improved in these latter days. "All irreligion," in its new interpretation, may refer to every vice and error, or it may apply, as in the days of religious persecution, to the characters of nonconformists, heretics, unbelievers, malignants, and all who are outside the pale of church, or mosque, or synagogue. Therefore, the value of the purpose must be measured not by the rhetoric of the call but by its actual mean-

ing. If it means a closer union of all men in the bonds of mutual affection, it is good ; but if it means a union of those who practise forms of worship against those who do not, it is bad. The more the sects divided, the safer it was for men ; and schism is better than union wherever the churches are strong. The less unity there is in the creeds, the better it is for the religion of knowledge and good works.

As a rule, the appeals for unity were made in a broad and liberal spirit, that said "brotherhood of man," and meant it ; but occasionally was heard the old, familiar denial of unity, except upon such terms as the churches may prescribe ; for instance, the Rev. Thomas Richey, of the General Theological Seminary of New York, treating the aspiration for unity as a sentimental chimera, said : "Let men dream as they will, it is the power of religion that is the only one unifying bond that can ever bind together the sum of the human family." It was the old formula, the hoary commandment, coupled with a threat, that has carried strife and moral desolation round the world, "You must be brothers in the church, or you shall not be brothers at all." For thousands of years theological religion has been dividing the "human family" into hostile tribes ; and now Doctors of Divinity tell us that nothing but religion can reunite that separated family in the bonds of Nature's brotherhood.

There were some wise men in the Parliament who saw the value of dividing religion into religions, and religions into sects, and on this part of the subject the Rev. Dr. Philip Schaff, of New York, said : "Before we discuss reunion, we should acknowledge the hand of Providence in the present divisions of Christendom. Sects are a sign of life and interest in religion." The Rev. George T. Candlin thought otherwise, for in agony of soul he cried aloud, "Our divisions are strangling us."

This cosmopolitan assembly was not strictly a parliament, because extemporaneous debate was absent. It was rather a World's Fair of theological exhibits with a sort of Midway Plaisance attachment for the *bric à brac* of creeds. It was a conventicle where delegates on the platform representing different and opposing liturgies delivered essays on theoretical religion to a miscellaneous laity on

the floor. It was an œcumenical council to compare theologies, although the spirit of non-theological religion found expression in the contributions of the editor of this magazine and some other delegates, who saw the dawn of a new religious era containing less myth and more truth, less creed and more deed, less dogma and more proof.

Toward one another, with few exceptions, the delegates were tolerant, sympathetic, and kind, but there was discord among the creeds. In daily repetitions the orators expanded a sentiment into a religion, and they proclaimed it in a multitude of echoes as "The Fatherhood of God, and the Brotherhood of Man." What they really wanted was a "revised version" of this newer testament. They had been spiritually fed for years on Fatherhood and Brotherhood, but there was not enough of that manna and quail for the wants of the world. They were afraid to say so, but their aspiration was for more Fatherhood in God, and more Brotherhood in Man. While there was in the harmonies of the Parliament a strain of *Te Deum Laudamus*, there was also in the minor keys a wail of *De Profundis*, "Out of the depths I have cried to thee, O, Lord; O, Lord, hear my voice." It was the plaintive cry of disappointed souls for a new God.

If the intention of the congress was to show to heathens, Jews, and pagans, the superiority of Christianity to their benighted faiths, its purpose failed. Long before the end of the Parliament our hymns of self-glory were sung in a penitential key. In the presence of the heathens and the pagans, Christian Doctors of Divinity came to the mourner's bench and made confession that Christianity had imposed itself upon mankind by force, fear, deception, dogmatism, and ceremonials. In sorrow they said that it showed no sanctity of manners for the imitation of other creeds; that as a theory of heaven it was well enough, but that as a rule of righteousness for practical uses on this earth it had not set a good example; and that the time had come for "christianising Christendom."

One day, a visitor impressed by the occasion, said to a friend, "Are the old religions worn out?" The answer was, "No, they are found out." Some of the proceedings justified the sarcasm, for listening to the testimony as it was occasionally given from the plat-

form, the impartial observer wondered whether the old religions were on exhibition for censure or for praise; and whether the Parliament was convened in order to repeal them or merely to repair them and adapt them to the twentieth century. Many of the Christian exhibitors advertised their faith and exalted it above all the others as the moral and spiritual essence of Divinity itself, the only power to save souls and give them life everlasting; and yet Christianity was the only religion there that was accused and condemned by some of its own teachers consecrated and ordained for its evangelical and sacramental work; a phenomenon that puzzled all the foreigners from Greenland's icy mountains to India's coral strand.

At the World's Fair proper, more awards for excellence were given to the heathens than it was thought possible they could win; and so it was at the Parliament. In the competition of religions the heathens carried away the prizes of most value, while the agnostics and the unbelievers cheered. Christianity received "honorable mention" here and there for its material achievements, but its exhibits of moral and religious work were not of a high order. Its mottoes and precepts, its amulets and charms were much admired, but it got no gold medals for its national or international morality. For these reasons there is a suspicion in many pulpits that it was unwise to call the Parliament, and that it has weakened the churches in America. The Rev. Dr. Morgan Dix of New York, in a sermon preached on Sunday November 12, said:

"We have recently been treated to the sight of what was called the Parliament of Religions. I do not believe that those who projected the scheme were animated by any feeling of antagonism to Christianity. I impugn no one's motive. I do say, however, that the Christians who were there were attacking the cross of Christ. I do not forget, but thank God for it, that some strong utterances were heard from Christian men who stood up for Christ in that odd company with as much strength as could be exhibited with courtesy to the other guests. I doubt, however, that if the prime movers of that Parliament had wanted to spread agnosticism they could have made a better move. It was a masterpiece. Through the rose-colored haze of that atmosphere one seems to discern above the heads of the Jewish rabbi, the Indian priest, the Greek patriarch, and the learned advocates of Shintoism, Brahmanism, and Romanism, a banner bearing this inscription, 'To the Unknown God.' "

It was not so much a sacrifice to the Unknown God, as it was

the anticipatory worship of the new God coming with a better dispensation ; a prayer for the blending of all souls into one universal soul. As expressed by the Rev. P. C. Mozoomdar, a Hindu priest, "This unity of man with man is the unity of man with God, and the unity of man with man in God is the kingdom of heaven."

There was nothing said against Christianity in the Parliament that had not been said by scoffers and sceptics long ago, and from them it might easily be endured, but it grieved the soul of Dr. Dix that "Christians who were there were attacking the cross of Christ." Perhaps they were only thrown in for emphasis to give pungency to the scolding, but some of the invectives hurled at Christianity by Christian clergymen were somewhat exaggerated, as will appear from the following specimen taken from the address made by the Rev. Dr. Alger of New York : "The great Anti-Christ of the world is the unchristian character and conduct of Christendom. We put the kingdom of heaven in the background and work like incarnate devils for every form of self-gratification."

On the other hand, some of the Christian divines who "stood up for Christ in that odd company," in their exaggerated praise of Christianity made it so aristocratic, arrogant, exclusive, and self-righteous, that its portrait as painted by Dr. Alger was not much improved. A very fair quality of dogmatic and rather uncivil Christianity was presented by Professor Wilkinson, a theologian of Chicago, who "stood up for Christ" and nobody else ; and who thought it necessary in doing so to tear away from Christianity all humility and toleration as blemishes on its character. Generously assuming that all our souls are "lost," he maintained that they could be "saved" only in the Christian church, and he said :

"The only religion that can be accounted true is the religion that is trustworthy to save. . . . Christianity leaves no loophole of escape for the judged and reprobate Anti-Christian religions with which it comes in contact. It shows instead only indiscriminate damnation leaping like forked lightning from the presence of the Lord. The attitude of Christianity towards all other religions is one of universal, absolute, eternal, and unappeasable hostility."

The above certificate of character ought to be accepted, because it comes, not from an untaught superstitious peasant, or a monk of

the dark ages, but from a professor of the University of Chicago, in the latter part of the overrated nineteenth century; not the ninth, but the nineteenth, in fact, almost the twentieth century. Professor Wilkinson fortified his position with many "forked lightning" texts from the Scriptures of the New Testament; but the difficulty with him is that his argument is obsolete.

Professor Wilkinson treated with contempt the "mysteries" of heathen religions; as if there were no "mysteries" in his own. He was immediately followed by the Rev. John Devine of New York, who glorified Christianity for giving to other religions a message of Fatherhood, Brotherhood, Redemption, Atonement, Character, and Service. Like a magician conjuring with his abracadabra, he overawed reason by presenting Christianity to the people as a "mighty mystery." Speaking of its founder, Mr. Devine explained that "in taking the form of man he did not seek the permission of ordinary laws, but he came in his own spiritual chariot in the glory of the supernatural." That is very much like the African theology that prevailed among the negroes in the days of slavery. They could not imagine any person going into heaven, or coming out of it, except in a "chariot." As hope was forbidden them in this world, they found some consolation in believing that some day they would be riding over the golden pavements of the new Jerusalem in a "chariot." They thought that when the sorrows of this life were over they would be carried up to heaven in a "chariot," and they lightened their bondage a little by singing "Swing low, sweet chariot, coming for to carry me home." If the Christian religion is a "mighty mystery," then revelation reveals nothing, but conceals everything, and instead of solving religious puzzles, it creates them.

The belief was present in some of the divines that if the Roman Catholic Church could be excluded from it, Christianity would get along very well, while some others thought that the only religious unity possible was in the Church of Rome. The Rev. Mr. Maury, a French Protestant said, "The French people hold in abhorrence intolerance and hypocrisy, so that they could never endure the spirit of Jesuits and Pharisees." The Rev. Mr. Gmeiner, a Catholic, was of a different opinion, for he said: "The religion of Christ will

ultimately reunite the entire human family in the bonds of truth, love, and happiness." In his enthusiastic imagination, he conjured up an impossible future, and beheld, as in a vision, science again the bond-maid of religion in the service of Rome ; the restoration of those benighted centuries, when men had the minds of asses, without the asinine bravery to kick ; when the king owned the bodies of the people, and the bishop owned their souls ; for, said this hopeful prophet, "the true home for all under God is the Holy Catholic Church." The science of his religion had convinced this learned ecclesiastic that man had not lived upon this planet longer than ten thousand years. The limit allowed by theology was formerly six thousand years, but he was willing now to grant four thousand additional years.

To the possible dismay of that reverend father, Mr. M. T. Elder, a Roman Catholic from New Orleans, came into court, gave himself up, and turned state's evidence against his church. He complained that it was losing strength and reputation, and that it was not great either in achievements or in men. He seemed to think that it was deficient in moral genius and intellectual vitality. With some bitterness of sorrow, he said :

"The great men of this nation are and will continue to be Protestant. I speak not of wealth, but of brain, of energy, of action, of heart. The great philanthropists, the great orators, the great writers, thinkers, leaders, scientists, inventors, teachers of our land have been Protestant. What does surprise me is the way we have of eulogising ourselves, of talking buncombe and spread-eagle, and giving taffy all round. But, truly, I cannot. When I see how largely Catholicity is represented among our hoodlum element, I feel in no spread-eagle mood."

Although the style of Mr. Elder was not a model of elegance, many of the addresses delivered by Christian delegates displayed eloquence of good literary quality ; but much of it was pulpit eloquence, asserting, declaring, and proclaiming, without condescending to anything so rudely secular as proof, or even evidence ; for instance, the Rev. Dr. Burrell, of New York, in a gush of scriptural metaphor and psalm, poured out his rejoicings thus :

"God be praised for this congress of religions. Never before has Christianity—the one true religion—been brought into such open and decisive contrast with

the other religions of the world. This is indeed the Lord's controversy. The altars are built, the bullocks slain, the prayers are offered, and the nations stand beholding. Now, then, the God that answered by fire, let him be God."

This was a dangerous challenge, the language musical enough but it was gong-music, emotional declamation, and defiance. The Oriental Gentiles on the platform, guests of the Christian theologians, listened with heathen courtesy, while their entertainer gave them to understand that his particular special theology was the "one true religion"; and they looked at him with polite wonder when he challenged them to test it by the ordeal of fire, a plan of judgment that never was very truthful, and one that has long been abandoned by civilised law. Had the heathens and the pagans accepted the challenge, Dr. Burrell would certainly have lost, for God no longer decides by fire the vainglorious wagers of men. It is true, according to the Scriptures, that God answered by fire the appeal of Elijah, and thus enabled the Hebrew prophet to win the wager he had made with the prophets of Baal, but that was under the old dispensation, and such a miracle will never be done again. It is also true, according to the same authority, that Elijah took the losers down to the brook Kishon and "slew them there." A religion that stakes its character or its truth on the fiery ordeal by which Elijah won his victory at Mount Carmel, is rash when it invites a contrast between itself and other faiths; and it is doubly rash when it presents the tragedy of Kishon as a specimen of its toleration and its mercy.

Forgetting the work of their own missionaries, the Christians in the Parliament thought that the heathens there would bow down reverently before the spiritual splendors of Christianity, but the Mohammedans and the Buddhists and the Brahmins told them that the heathens knew Christianity well. They were sorry they could not give it a good character, because it had corrupted the manners of their people, broken the faith of treaties, fomented sedition, prevailed by violence, and had made the cross a menace to their freedom and the symbol of their subjugation. Satsumchyra, a Brahman priest, comparing the hypothetical Christianity of England and America with the "applied" Christianity of his own country, said :

"Our friends here have been picturing to you Christianity standing with the Bible in one hand and the wizard's wand of civilisation in the other, but there is another side, and that is the goddess of civilisation with a bottle of rum in her hand. Oh, that the English had never set foot in India! Oh, that we had never seen a Western face! Oh, that we had never tasted the bitter sweets of your civilisation, rather than that she make us a nation of drunkards and brutes."

And Horin Toki, after enumerating the blessings conferred by Buddhism upon Japan, said: "It is a pity that we see some false and obstinate religionists have been so carelessly trying to introduce some false religions into our country."

One day the Parliament was violently shaken by the speech of Kinza Ringa M. Hirai, a Buddhist from Japan. This address was very nearly Christian in its combative accusations and replies. With spiritual and ideal Christianity M. Hirai had no quarrel; in fact, he expressed great admiration for it; but he condemned the actual and material Christianity that had invaded the empire of Japan, and he sarcastically resented the inhospitable welcome given to the Japanese by the Christians of California. In his complaint, he said: "Among the innumerable unfair judgments, the religious thought of my countrymen is especially misrepresented, and the whole nation is condemned as heathen." He declared that the Japanese were not sectarian; that the wise and virtuous thoughts of all religions were adopted in Japan, and that from the beginning of her history, Japan "has received all teachings with open mind."

Having asserted that the religion of Japan was not at all jealous of other faiths, M. Hirai spoke freely of the injustice practised on his people by the Christians, and he said that among the vices brought into Japan by Western civilisation there were some "which were utterly unknown before and entirely new to us—heathen, none of whom would dare to speak of them even in private conversation." M. Hirai showed also that in the religion of diplomacy the Buddhists were as infants in the hands of the Christians. He proved that in the making of commercial and political treaties between his countrymen and the Western powers, the Japanese had been cheated in a systematic and highly civilised way. Further, that all efforts to revise and amend those treaties, so as to put them on the plane of

justice, had been consistently and persistently defeated by the Christians. It is not surprising that, smarting under experimental Christianity, M. Hirai should look with suspicion upon the emotional goodness and metaphysical benevolence of the Christian religion.

Under the meek and gentle exterior of the Orientals there was a stratum of what goes by the name of manly spirit. They were slow to anger, but they resented insult, for when the Rev. Dr. Pentecost of London, after advertising his own exhibit in a very boastful way, and contemptuously diminishing the Hindu gods, as not at all to be put in comparison with Christ, reflected with some coarseness on the chastity of those women who serve in the temples of India, a Hindu delegate, Mr. Gandhi, repelled the sneer as a calumny, and rebuked the self-righteousness of the critic by pouring pity on his head in this way ; he said :

"This platform is not a place for mutual recrimination, and I am heartily sorry that from time to time a most un-Christian spirit is allowed free scope here, but I know how to take these recriminations at their proper value. . . . Some men in their ambition think that they are Pauls. These new Pauls go to vent their platitudes upon India. They go to India to convert the heathens in a mass, but when they find their dreams melting away they return to pass a whole life in abusing the Hindu. Abuse is not argument against any religion, nor self-adulation a proof of the truth of one's own."

This was dignified and severe, but lest the rebuke might fall upon other Christians, innocent of offence, Mr. Gandhi, with refined courtesy, spoke of the unfriendly censure cast upon the faiths of India, as proceeding from an "un-Christian spirit." There is an invisible, intangible ideal that appeals to the generous imagination as the "Christian spirit," but we must confess that often in its actual visible form, and in all theological comparisons, it is the spirit shown by Mr. Pentecost. It is incurable, because the opinion of many Christians is that Christ is gratified by flattery, and those who thus exalt him, think they escape the condemnation and come within the blessing of the promise, "Whosoever, therefore, shall confess me before men, him will I also confess before my Father which is in heaven. But whosoever shall deny me before men, him will I also deny before my Father which is in heaven." Professor Wilkinson

was frank and honest when he declared that the attitude of his own religion toward every other is one of "universal, absolute, eternal, and unappeasable hostility." That is not merely a sentiment; it is history, and the explanation of it given by some people is that Christianity in the Wilkinson form is not the religion of Christ.

Several of the delegates presented essays on "The Personality of God," and in this discussion the Christians had the best of it, because they exhibited God as an exaggerated man, a concrete personality, a giant omnipotent, easy to comprehend even by the men who lived in the lower Silurian age of learning. Professor Valentine, a Lutheran, said:

"In Christian teaching, God is a personal being, with all the attributes or predicates that enter into the concept of such a being. In the Christian Scriptures of the Old and New Testaments this conception is never for a moment lowered or obscured. God, though immanent in nature, filling it with his presence and power, is yet its Creator and Preserver, keeping it subject to his will and purposes, never confounded or identified with it. He is the infinite, absolute personality."

It may be, that in the Scriptures "this conception of God is never lowered," for it is not easy to lower it, unless we make a "concept" of God lower in rank than man. Even in the Scriptures this conception of God, though never lowered, is very often raised; and outside the Scriptures, too, it is raised by all enlightened men to moral and philosophical heights where idolatries never fly. Even the Hindu conception of God raises the Deity to a higher plane than the convenient shelf within easy reach where Professor Valentine puts his image. Manital Ni Dvivedi, of Bombay, said:

"This word God is one of those which have been a stumbling-block to philosophy. God, in the sense of a personal creator of the universe, is not known in the Veda, and the highest effort of rationalistic thought in India has been to see God in the totality of all that is."

The childish conception of Deity which prevailed when men first became afraid of God is thus compassionately treated by the Hindu.

"I humbly beg to differ from those who see in monotheism, in the recognition of a personal God apart from nature, the acme of intellectual development. I believe that is only a kind of anthropomorphism which the human mind stumbles

upon in its first efforts to understand the unknown. The ultimate satisfaction of human reason and emotion lies in the realisation of that universal essence which is the all."

As might have been expected in a parliament of religions, nearly all the delegates who spoke on that subject proclaimed the personality of God, although the form and quality of that personality changed like the shape of a cloud. It varied according to the faith and fancy of its advocates. Sometimes it was a sentiment, a hope, an intuition, and at other times a demonstrated fact. It appeared as a natural instinct, and also as a supernatural revelation. In one address it was a spiritual perception, and in another an intellectual result. Some thought that God was omnipotent, while others believed that he was bound by the impossible, like any mortal man. Amid the differences, there was a strong opinion that reason was not at all to be trusted in the search for God. The Rev. A. F. Hewitt, of the Paulist Fathers, made a very learned, eloquent, and ingenious attempt to place the personality of God on a scientific and logical foundation, and at the end of it confessed his own failure by calling, for assistance, on the supernatural. He said :

"It is the highest achievement of human reason to bring the intellect to a knowledge of God as the first and final cause of the world. The denial of this philosophy throws all things into night and chaos, ruled over by blind chance or fate. Philosophy, however, by itself does not suffice to give to mankind that religion, the excellence and necessity of which it so brilliantly manifests. Its last lesson is the need of a divine revelation, a divine religion, to lead men to a knowledge and love of God."

Supporting the argument of Father Hewitt, the Rev. Dr. Momerie rejected the "accident" theory and asserted that, "if the world is not due to purpose, it must be the result of chance"; but he soon broke away from his theology into the open fields of nature, where, according to Dr. Momerie, even God must obey the law. He said :

"When we say that God cannot do wrong, we virtually admit that he is under a moral obligation or necessity, and reflexion will show that there is another kind of necessity, viz., mathematical, by which even the infinite is bound."

All these bewildering guesses bring to mind the despair of the prophet when, lost in the labyrinths of the puzzle, he exclaimed :

"Who by searching can find out God?" Hard as the problem is, there are men who think they have discovered him in the infallible almanac, where it foretells, with scientific faith, the time of the eclipses, the rising and the setting of the sun, and the ebbing and flowing of the tides; while others think they have discovered him in supernatural revelations, although no two of their conceptions are alike. Jinanji Jamshedji Modi, a disciple of Zoroaster, said: "Evidence from nature is the surest evidence that leads a Parsee to a belief in the existence of the Deity. From Nature he is led to Nature's God"; but Dr. Isaac M. Wise, a Jewish rabbi, said: "All knowledge of God and his attributes comes to man by successive revelations, of the indirect kind first, which we call natural revelation, and the direct kind afterwards, which we call transcendental revelation." He did not explain the necessity for two revelations, and Horin Toki, a Buddhist bishop, denied them both. He looked upon the natural and the transcendental revelations of God as alike the creations of spiritual hasheesh, and he said: "We trust in the unity of truth and do not believe in the Creator fancied out by the imperfect brain of human beings." This was a discord in the Parliament, but it was neither harsh nor loud, and it was rather a concession to the doctrine that the "imperfect brain" of man is not at all to be trusted as a theological guide. With a different purpose the same thought was used by the Rev. S. J. Nicolls, of St. Louis, who believed that the Creator could not be "fancied out" by any human brain, but was manifested through the power of religious feeling; and as to the question of God's personality, he said:

"We cannot bring to its contemplation the exercise of our reasoning faculties in the same way that we would consider some phenomenon or fact of history. He who is greater than all hides himself from the proud and self-sufficient; he reveals himself to the meek, lowly, and humble of heart. It is rather with the heart that we shall find him, than by pursuing him merely with our feeble intellects. To-day, as always, the heart will make the theologian."

This was the key-note of despair, the knell of the debate, for ecclesiastics of high rank had been trying for many days to convince the "reasoning faculties" that God is a personality; and then comes a Presbyterian Doctor of Divinity, and tells them that it is useless

to address the reason, for "to-day, as always, the heart will make the theologian." The brain is dangerous, for logic lies there, and thinking-machines in the front of it make heretics, while the heart makes theologians. The argument is that men who exercise their minds, and make themselves intelligent, thereby become "proud and self-sufficient," and that God "hides himself" from them. But why should God hide himself at all? And why should the "reasoning faculties" of men be a terror to theologians?

The dual theology of old was practically abandoned by the Parliament, for the Devil was treated as a myth vanishing away. This was evidence of a radical change, for it is not long since men believed in a personal Devil as religiously as they now believe in a personal God, and in England, the Devil, was a personality "established by law." In all indictments it was charged that the defendant, "not having the fear of God before his eyes, but being moved and instigated by the Devil," did commit the crime of which he was accused; and he who doubted the existence of the Devil was anathema. True, as the "evil principle" or something of that sort, the arch-fiend occasionally walked across the platform like the ghost of Hamlet's father, but he received scant welcome, and soon faded into chaos. In fact he is Chaos now, according to the "revised version" as it was expressed by Mr. W. T. Harris, United States Commissioner of Education, who said: "God only is an absolute person. His pure not-me is chaos, but not a personal Devil." This made it necessary for Mr. Harris to revise the venerable dogma that the atonement was the payment of a debt due the Devil, and he presented what he called "a new theory of the death of Christ as a satisfaction, not of the claims of the Devil, but as a satisfaction of the claims of God's justice for sin." The revision presented by the Commissioner of Education was well received, and one of the delegates remarked that the new theory was "more rational" than the old one. Although the existence of the Devil was denied, a suspicion prevailed that he was yet alive, and that he was not in the ranks of the "unemployed," for Jinanji Jamshedji Modi, the Parsee, said: "The Zoroastrian idea of the Devil and of the infernal kingdom coincides entirely with the Christian doctrine. The Devil is a murderer and the father of lies,

according to both the Bible and the Zend Avesta." The conclusion is that so long as murder and lies remain the Devil is alive and well.

Satan, as a personality, having been dismissed from the service, there was no longer any religious use for "the infernal kingdom," and so that lurid bit of ancient orthodoxy passed from the real to the imaginary, and became a harmless figure of speech, a metaphysical corner of the conscience where lies the torment of the soul. According to the Rev. Charles H. Eaton of New York, "Hell is a spiritual and personal fact but has no objective existence"; and, indeed, something like that was the explanation of Heaven. It was purely a subjective revelation and a spiritual dream; "not a locality," they said, "but a state of mind."

The Rev. Joseph Cook of Boston, a very athletic Doctor of Divinity, having used up all the superlative adjectives of excellence to describe the Bible, hurled a sneer at the enlightened Greeks, and said :

"I take up the books of Plato, which I think are nearest to those of the Bible and press those clusters of grapes and there is an odious stench of polygamy and slavery in the resulting juices."

This clamorous comparison blown into the amphitheatre as from a brass trumpet, like the challenge of Brian De Bois Guilbert in the tournament at Ashby, was bold in its defiance of the Bible evidence, but it retreats into silence before the sorrowful cry of a woman. Mrs. Fannie Williams, a colored woman, and therefore an expert witness, said :

"Religion, like every other force in America, was first used as an instrument and servant of slavery. All attempts to Christianise the negro were limited by the important fact that he was property of a valuable and peculiar sort, and that the property value must not be disturbed, even if his soul were lost. If Christianity could make the negro docile, domestic, and less an independent and fighting savage, let it be preached to that extent and no further."

That mournful accusation uttered in a gentle voice rang out as when the cuirass of the haughty templar was hit by the spear of the Disinherited Knight, and a sympathetic vibration came back to the little woman from the heart of every man in the hall. Further, she said :

"Such was the false, pernicious, and demoralising gospel preached to the American slave for two hundred years. But bad as this teaching was it was scarcely so demoralising as the Christian ideals held up for the negro's emulation. When mothers saw their babes sold by Christians on the auction block in order to raise money to send missionaries to foreign lands; when black Christians saw white Christians openly do everything forbidden in the decalogue; is it not remarkable if such people have any religious sense of the purities of Christianity? 'Servants obey your masters' was preached and enforced by all the cruel instrumentalities of slavery, and by its influence the colored people were made the most valued slaves in the world. The people who in Africa resisted with terrible courage all invasions of the white races, became through Christianity the most docile and defenseless of servants."

The spirit, broken by what she called "the slave Bible," appears to have been inherited by Mrs. Williams, for she still walks among the churches, wondering where the seats for the colored Christians are; groping in the Christian temples behind the "color line," in search of that "holy communion" which is not for her, nor for her people. Her soul, scarred by the lash of the slave driver, seeks for healing and recompense at the altars of the men who plied the lash. She still believes in the "slave Bible," and worships a Christian ideality. In her own eloquent way, she said: "The hope of the negro and other dark races in America depends upon how far the white Christians can assimilate their own religion." There is pathos in that hope, for at the bottom of it is despair. If the white Christians have never yet been able to assimilate their own religion, what reasonable prospect is there that they will do it now?

It may be that the censure of Christianity by Christians is an argument in its favor, proving that it is able to stand fire, and that it has within itself the spirit of toleration and reform. This may explain the good-natured mocking and scoffing at the canonical mysteries by some "open and avowed" Christians. Here is a specimen from the genial humor of Dr. Momerie of London:

"Christ taught no dogmas, Christ laid down no system of ceremonialism. And yet, what do we find in Christendom? For centuries his disciples engaged in the fiercest controversy over the question, 'Whether his substance'—(whatever that may be—you may know, I don't)—'was the same substance of the Father or only similar.' They fought like tigers over the definition of the very Prince of Peace. Later on Christendom was literally rent asunder over the question of 'whether the Holy Ghost proceeded from the Father to the Son' (whatever that may mean). And

my own church, the Church of England, has been, and still is in danger of disruption from the question of vestments—and clothes."

That sarcasm is comical enough but in all religions that appeal to the imagination and the emotions, vestments and clothes perform an impressive and awe-inspiring part. In Ireland the peasants think they give additional solemnity to their statements when they swear "by the holy vestments," and this proves that the emblematic meanings of surplice and gown, cope and stole, mitre and cowl, are essential parts of ceremonial religions ; they ornament the ritual itself ; they hypnotise the congregations by tinselled robes embroidered with cabalistic signs, and they make adoration fervent through spiritual fear. Dr. Momerie may not know it, but it is not impossible that their secret spell is part of the fascination that keeps him in the Church of England.

Dr. Brodbeck, of Hannover, Germany, had a new religion fresh from the mint of his own imagination, and he called it "Idealism." After it had been explained by the help of many negations, it proved to be a bright and airy nothing, as easy to grasp as a rainbow. It was not a religion, but a retreat from all religions, a flight in a balloon to the clouds. It was even sceptical of science, and had some doubts about the canons of geometry. In comprehensive denials Dr. Brodbeck said :

"The new religion is not a philosophical system of any kind. It is not atheism, not pantheism, not theism, not deism, not materialism, not spiritualism, not naturalism, not realism, not mysticism, not freemasonry ; nor is it any form of so-called philosophical idealism. It is not rationalism, and not supernaturalism ; also not scepticism, or agnosticism. It is not optimism, and not pessimism ; also not stoicism, nor epicureanism ; nor is it any combination of these philosophical doctrines. It is also not positivism, and not Darwinism or evolutionism. It is also not moralism, and is also not synonymous with philanthropism or humanitarianism."

From all those denials it may be assumed that the new religion of Dr. Brodbeck is not a mountain, or a valley, or a lake, or a house, or a ship, or a load of hay. It is the ghost of the indefinable "What is it," that Mr. Barnum used to show, and it is harder to catch than the sea-serpent of delirium tremens. All good people are eligible for membership in Dr. Brodbeck's church, but they must

not be too good, for he says: "We are not in favor of extremes; in most cases virtue is the middle between extremes." This religion ought to be popular as a sort of half-way "split the difference" compromise between the principles of good and evil, between the canons of right and wrong.

The original founder of agnosticism was not Professor Huxley, but poor Jo, the crossing-sweeper, who "never knowed nothink," and although Dr. Brodbeck repudiates agnosticism, he must belong to the sect of Jo, for he says: "We do not know how things originated, or if they did originate at all; so we do not know what will be the last end and aim of everything existing, if there is anything like last end and aim at all"; and so he patronisingly leaves these and kindred problems, especially the hard ones, to "science." "We do not know," says Dr. Brodbeck, "where we come from nor where we go. We do not believe in the resurrection, nor in the immortality of individuals, and so we leave it to science to decide how far there can be any existence after death." Dr. Brodbeck and his disciples do not believe in heaven, "because astronomy is against such a belief"; nor in hell, probably for geological reasons; but, he says, "we acknowledge willingly the relative truth of those and similar dogmas." This admission at once invalidates Dr. Brodbeck's patent on a new religion. Belief in the absolute error and the relative truth of certain dogmas is not a new religion, but an old one. The new religion that is coming will not believe in the relative truth of any doctrine, article, code, or sacrament that is positively false.

One pleasant feature of the Parliament was the high character of the delegates, their learning, their eloquence, their hope for more truthful creeds, and the spirit of toleration that actuated most of them. Their courtesies were intentional, and as the essays were independently written, and not in contradiction of one another, their disagreements were accidental, resulting from differences of race, language, education, customs, and mental constitution; but the discords were inevitable, because the religions of mankind are, from the nature of their separate claims, irreconcilable. It was a promise full of hope to all mankind when priests, presbyters, and bishops of opposing creeds declared that they would never again be so in-

tensely religious as to hate one another ; and the personal good nature of the delegates, excepting two or three, justified the boasting of Dr. Momerie when he said : " And here on this platform have sat as brethren the representatives of churches and sects which during by-gone centuries hated and cursed one another ; and scarcely a word has fallen from any of us which could possibly give offence."

Human sympathy is catching ; it is liable also to take the form of an epidemic and spread far beyond the boundaries we have set for its operation. When the representatives of churches and sects cease to hate and to curse one another, they will very likely cease to hate and to curse poor sinners, and that unbelieving multitude whose " reasoning faculties " have tempted them to go outside of all the churches and all the sects in search not of everlasting life, but of eternal truth, without which all religions are idolatries and everlasting life itself is worthless. If the Parliament shall make love instead of hate the stimulus of religious controversy, its influence for good will far exceed the educational benefit of the great Fair ; for if the representatives of churches and sects display toleration and charity, the congregations will catch the benevolence, for as Dr. Momerie himself said : " It is the clergy who are responsible for the bigotry of the laity."

The climax, or anti-climax, of the debate appeared on the last day of the Parliament in the speech and person of Christopher Jibarra, "Archimandite of the Apostolic and Patriarchal Throne of the Orthodox Church in Syria and the Whole East." The religion of the Archimandite was as broad and comprehensive as his name and title, for he had the magnanimity to say, "I believe that God has preserved the Koran, and also preserved Islam, because it has come to correct the doctrines and dogmas of the Christians." This opinion coming from a Christian prelate of high rank made a great sensation, for it was a confession that Islam instead of corrupting Christianity had reformed it ; but the right reverend confessor went farther than that, and made a greater sensation when he proposed that both of them be superseded by something better than either, and he was generously willing to leave the making of this new religion to the inventive genius of the Americans. He said : " As Co-

lumbus discovered America, so must Americans find a true religion for the whole world, and show the people of all nations a new religion in which all hearts may find rest."

The greatest sensation of all was in reserve, and it came like sudden thunder when the Archimandite, imitating American customs, began to talk, not like a cloistered abbot, but like a free and enlightened fellow-citizen. As if he had been trained all his life in American politics and was merely taking part in a national convention, he proposed that all their conflicting theologies be referred to a committee on resolutions with instructions to report a platform of principles for the new religion. He said :

"All the religions now in this general and religious congress are parallel to each other in the sight of the world. . . . From such discussions a change may come, perhaps even doubts about all religions. . . . Therefore, I think that a committee should be selected from the great religions to investigate the dogmas and to make a full and certain comparison and approving the true one and announcing it to the people."

There was nothing visionary or theoretical in that proposal ; it was eminently practical ; but unfortunately, the committee was not appointed, the great opportunity was lost, and the phantom of unity which the Parliament had been chasing for three weeks disappeared.

Although the unity of God was the prevailing sentiment of the Parliament, the dual character of Holy Writ was confidently declared by some individual delegates, who asserted that while it might be scientifically false in certain places, it was even in those very errors religiously true. Its theological accuracy was not at all impaired by its philosophical mistakes, and the Rev. Dr. Briggs, fresh from his heresy trial, said :

"We are obliged to admit that there are scientific errors in the Bible, errors of astronomy, geology, zoölogy, botany, and anthropology. . . . There are such errors as we are apt to find in modern history. . . . But none of the mistakes which have been discovered disturb the religious lessons of the biblical history."

This is true only when the so-called errors are in parables, or in language obviously figurative or allegorical. When they appear as realities, revealed by divinely inspired prophets and apostles, their mistakes do seriously "disturb the religious lessons" they pre-

tend to teach. A statement which is historically false cannot be divinely inspired, nor can it be religiously true. Do those doctors of divinity, who so devoutly worship God, believe that he ever inspired his prophets to make mistakes in astronomy, in geology, in history, or in anything? And do they believe that he needs any such mistakes to aid him in the moral government of the world, or in the religious instruction of mankind? Do they think that a falsehood, as soon as they make it "scriptural," becomes true? There never was a book so sacred that it could sanctify a lie. All truth is holy, whether it be written in books, or stones, or stars; and all error is unholy, no matter in what scriptures it may be.

Dr. Briggs made this confession from the platform of the Parliament: "We cannot defend the morals of the Old Testament at all points." If so, the Testament ought to be revised, and all those points excluded from it that cannot be defended; for so long as they remain in it they teach false theories of morals to multitudes of men, women, and children, who are not so learned as Dr. Briggs, who accept the whole of the Testament as true, and who believe it "at all points" and at every point as the infallible word of God. Morals that cannot be defended ought to be condemned. It is not within the power of the Sanhedrim, or the Synod, or the Ecumenical Council to convert bad morals into good religion, or to make Holy Scriptures out of errors in astronomy, geology, zoölogy, botany, history, and anthropology. Whether the delegates intended it or not, that was the lesson of the Parliament.

Some of the delegates gave a new definition to the word "religion," making it a system of work instead of worship, of practice instead of prayer. Amid signs of general approval, the Rev. Dr. Hirsch, a Jewish Rabbi, said, "Character and conduct, not creed, will be the keynote of the gospel in the church universal." Others expanded the word until it became large enough to include the science of mathematics as well as the moral code, and they made every truth eligible for membership in the new communion, and every error "cursed and excommunicate."

The Parliament provided a sort of intellectual crucible in which all the creeds will be tested and purified as by fire. That sectarians

of a hundred theologies have brought them to the furnace is a sign of social progress, and a promise of larger toleration. He who fears the fire has no faith, for whatsoever is true in his religion will come out of the furnace as pure metal, leaving the dross to be thrown away.

M. M. TRUMBULL.

CHICAGO.

## MODERN PHYSIOLOGY.

IF we define physiology in broad terms as the science of the phenomena of life, and characterise as its object the investigation of the phenomena of life, physiology is a very old science; as old, indeed, as human reflexion on any of the processes of nature. But the character of physiological thought has undergone in the course of the development of the human mind such manifold and profound changes that physiology has exhibited in different periods quite different aspects. So that for a critical judgment of the present state of the science a retrospect of certain phases of its past history, is very important.

### THE EARLY VITALISM.

In the sixteenth century, after the long intellectual night of the Middle Ages, a sweet, refreshing zephyr proclaimed the dawn of a new era for all fields of human thought,—for art and philosophy, for science and medicine. Physiology did not lag behind in the new development. The exact method of natural inquiry, founded by men like Copernicus, Kepler, Galileo, Bacon, and Descartes, was, by Harvey's classical investigations on the circulation of the blood, also introduced into physiology, which at that time was still based on the old system of Galen. How greatly the rise of the exact critical method of inquiry promoted and stimulated the further development of physiology is best seen by the powerful growth of the two great schools of the seventeenth century, the *iatro mechanical* (*iatro-physical, iatro-mathematical*) and the *iatro-chemical*, the first of which, founded by the brilliant Borelli, sought to explain the phe-

nomena of life by the principles of physics, while the latter, founded by Sylvius, more especially employed the laws of chemistry for the explanation of the vital processes. Physiology was thus transformed into a physics and chemistry of the human body, an enormous number of physiological facts were disclosed, numerous theories were promulgated, and in the year 1757 Haller was able, on the basis of a stupendous mass of material, to give to the scientific world for the first time, in his "Elementa Physiologiae Corporis Humani," a large compendium of physiology.

But the hopes of the iatro-mechanical and iatro-chemical schools to explain all phenomena of life by the principles of physics and chemistry fell far short of realisation. Since the establishment and development by Glisson, Haller, John Brown, and others, of the doctrine of irritability, this latter property was recognised as a quite universal attribute of living organisms, as distinguished from inorganic bodies; physicians thought beyond a doubt that they saw in irritability the essence of life. But what was irritability? Here was something that did not admit of immediate physical or chemical explanation.

Perhaps it was lingering traces of the animism of Stahl, still fresh in the minds of scientists, or perhaps reminiscences of the mediæval notions of *πνεῦμα*, *δίναυις*, *spiritus*, and so forth, outgrowths of the doctrines of the ancient pneumatic physicians, that in the face of the difficulties of explaining mechanically the nature of the phenomena of life matured a doctrine which was subsequently to be of far-reaching consequence in physiology. Namely, the theory of *vitalism*.

The argument which forms the basis and gist of the theory of vitalism is as follows: since the processes of life do not admit of explanation by physical and chemical forces, there must be active in living organisms some other force which produces the phenomena of life, a force of a different kind from that which physics and chemistry take cognisance of, a vital force, *vis vitalis*, *Lebenskraft*, *force hyperméchanique*.

The defect of this reasoning is manifest. All proof of the correctness of the minor premise is wanting. For, if hitherto and with methods which now exist, certain vital processes have not been re-

duced to physical and chemical causes, it follows by no means from this fact that *in a last analysis* they may not be conditioned by chemical and physical causes, or that *in the future* they will not be reduced to such. Vitalism, therefore, is simply a dogma of convenience.

Vitalistic ideas first appeared in the French schools of medicine, especially at Montpellier. In the track of the latter followed the German school of vitalism, whose founder was Reil. With most of the vitalists the vital force was thoroughly mystical, and never received a precise definition. In this fact its great convenience lay. Men spoke of a *nitus formativus* when they wished to explain why from the egg of a snake always a snake was developed, and from the egg of a bird always a bird. In some few exceptional cases though, by clear-headed thinkers, who would not rest satisfied with a hazy word, the idea actually was more precisely defined, but in such cases it almost always turned out that the essential principle of vitalism was sacrificed.

Johannes Müller, the greatest physiologist that the history of our science has produced, was a vitalist. He reckoned with a vital force. But in so clear a mind as Johannes Müller's, the idea of vital force could not preserve the slightest tinge of mysticism. To him, vital force was simply a peculiar, characteristic complex of the special factors which are realised in living bodies and form the basis of their expressions of life, but not an entity that worked in a manner opposed to chemical and physical laws. Subsequently, indeed, the term vital force was used in different senses, and even in Johannes Müller's time it no longer possessed a uniform significance, although it was then deeply rooted in physiological thought. Still, the unclear notion of a vital force was not definitively dispelled until the epoch of the great achievements of modern natural research, of comparative anatomy and of evolution, of the theory of descent and natural selection, of the investigations of chemical physiology, and above all, of the discovery of the law of the conservation of energy; and with the dissipation of this notion, the theory of vitalism was overcome.

## THE PRESENT STATE OF PHYSIOLOGICAL RESEARCH.

Psychologically, it is a highly interesting phenomenon, and one of moment in the history of science, that now, almost immediately after the final suppression of the old vitalism by the new development of the natural sciences, we have again arrived at a point which corresponds in the minutest details to the reversion to mystical vitalism which took place after the clear and successful research of the preceding century. As a fact, the parallel between the conditions of the eighteenth century and those of to-day is unmistakable. Now, as then, the physico-chemical method of explaining phenomena of life looks back on a brilliant, almost dazzling sequence of successes; now, as then, the tracing of vital processes to physical and chemical laws has reached a point at which, for many years, with the methods now at our command, no essential progress has been made, where, on the paths hitherto trodden, a boundary line is everywhere distinctly marked; and now, as then, on the horizon of science the ghost of a vital force looms up. It has already taken possession of the minds of serious thinkers in Germany, with the dire prospect of more extensive conquests; and in France, too, it would seem, science is slowly opening its door to this invasion of genuine mysticism.

To understand this phenomenon psychologically, and to acquaint ourselves with the means of staving off a general reaction into vitalism, it is desirable to examine more carefully the present state of physiology. A review of the productions which appear in our different physiological journals, which will best exhibit the present state and tendency of the science, furnishes an extremely remarkable spectacle. Leaving aside the science of physiological chemistry, which is independently developing with great success, we find, with the exception of a few good contributions to the physiology of the central nervous system, as a rule, only extremely special performances of very limited scope and import, wholly without significance for the greater problems of physiology, whether practi-

cal or theoretical, and exhibiting no connexion whatever with any well-defined general problem of physiology. In fact, what is called physiology is beginning here and there to degenerate into mere technical child's play. With every new number of our physiological magazines, the unprejudiced observer is gradually gaining the conviction that general problems of physiology no longer exist, but that inquirers, driven to desperation in the struggle for material, have no choice but to hunt up the old dry bones of science, on which they fall with the nervous rapacity of hungry dogs. And in the case of most of the productions, this impression is strengthened by the fact that the results, when once found, are wholly disproportionate to the tremendous expenditure of labor and time which it might be seen beforehand they would require. And yet all the time the great problems of physiology everywhere stare us in the face and seek solution. For, if we regard the problem of physiology as the investigation of the phenomena of life, we are certainly yet very far from the solution of even its most important and most general problems. We need not go to the extreme that Bunge does in his excellent text-book of physiological chemistry, of maintaining that the phenomena of our organism which we have explained mechanically are not genuine vital processes at all, no more than is "the motion of the leaves and branches of a tree shaken by a storm, or the motion of the pollen which the wind wafts from the male to the female poplar." But it is certainly no exaggeration to say that what the splendidly-conceived methods of the great masters of physiology since Johannes Müller have explained, are not elementary processes of life, but almost exclusively the crude physical and chemical actions of the human body.

For what have we attained? We have measured and registered the motions of respiration, the mechanics of the gaseous exchange in the lungs in their minutest details. We know the motions of the heart, the circulation of the blood in the vascular system, nay, even the slightest variations of the pressure of the blood, as produced by the most diverse causes, as accurately as we do the phenomena of hydrodynamics in physics. We know that respiration and the motion of the heart are conditioned by the automatic activity of ner-

vous centres in the brain. But no spirometer, no kymograph, no measuring or registering apparatus can give us the slightest idea of what takes place in the nerve-cells of the brain that condition the beating of the heart and respiration.

Further, we have investigated the motions of the muscles, their dependence on the most diverse factors, their mechanical powers, their production of heat and electricity, as exhaustively as only the phenomena of the special departments of mechanical physics have hitherto been treated. But of what goes forward in the minute muscle-cells during simple muscular contraction, no myograph, no galvanometer has as yet given us the slightest hint.

We know also the laws of the excitability of the nervous fibres, of the propagation of irritations, of the direction and velocity of nervous transmission, thanks to the ingenious methods of recent physiology, in all their details. But of what is enacted during these processes in the nerve-fibres and in the ganglion-cell from which it ramifies, no induction-apparatus or multiplicator can give us the least information.

We know besides, that the heat and electricity produced by the body, and the mechanical energy of muscular work, are the consequence of the transformation of the chemical energy which we have taken into our bodies with our food. But by means of what chemical processes the cells of the individual structures take part in these achievements, the most sensitive thermometer or calorimeter will not disclose, and no thermal pile or graphical apparatus will indicate.

We might give any number of examples of this kind but those adduced exhibit distinctly enough the point to be signalised. What we have hitherto attained is this: we have measured, weighed, described, and registered the gross mechanical actions of the human body, for the most part with a degree of precision that would excite the astonishment of the uninitiated; we have also acquired a considerable knowledge of the rough mechanical interactions of the individual organs of the body, the mode of operation, so to speak, of the machinery of organisms. But all that has been done, has been done only up to a certain point; and this point, at which we are

brought to a halt, is the *cell*. We have traced all phenomena of change in matter, form, and force back to the point where they disappear in the cell. But of what takes place in the muscle cell, the ganglion-cell, the lymph-cell, the gland-cell, the egg-cell, the sense-cell, and so forth, we have not the slightest conception. Moreover, we discover here, that even the minutest cell exhibits all the elementary phenomena of life; that it breathes and takes nourishment; that it grows and propagates itself; that it moves and reacts against stimuli. The *elementary* riddles of life, accordingly, have so far defied all research.

A balance thus cast of the results of past physiological research does not, it must be admitted, exhibit a very encouraging outlook.

But the resignation of physiology has been strengthened by another prominent factor. This is the attitude of physiological research to psychical phenomena. This attitude is at the present moment a varying one. On the one hand, we still find secretly cherished the vain hope of a chemical and physical explanation of psychical processes, that is to say, of a reduction of them to the motions of atoms, even though Du Bois-Reymond, in his famous address on "The Limits of Our Knowledge of Nature,"\* characterised such an undertaking as utterly futile; while on the other hand we meet with an absolute resignation in the face of this question—an attitude which is simply a frank acceptance of the conclusion of Du Bois-Reymond's address. Owing to the authority of its author, the "Ignorabimus" of Du Bois-Reymond has influenced great numbers of inquirers and produced in physiology a real paralysis of research, so that the abandonment thus effected of the solution of the old problem of explaining psychical phenomena mechanically has caused physiology for the most part anxiously and reverently to avoid any intrusion whatever of psychological questions. On the one side, then, is the idle hope of solving a problem which despite its being as old as human thought itself, research has not yet even touched; and on the other, an absolute renunciation of any treatment of the problem whatsoever.

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\* *Ueber die Grenzen des Naturerkennens. Reden. Erste Folge.* Leipsic. 1886.

## THE NEW VITALISM.

Exactly as happened in the preceding century, we have again arrived, after a long period of the most successful conquests in science, at a point where a barrier is placed to the methods hitherto pursued, and at which research has for a long time stood still without overleaping it. Again, as in the preceding century, we have psychologically the same constellation, and already the first signs are beginning to show themselves of a tendency of science to seek a second time its salvation in a theory of vitalism. Already voices are multiplying which proclaim that the phenomena of life will never be fully explained, while a few decades ago the confidence of successfully investigating all vital processes was without exception a universal one. As a fact, the same vitalistic ideas have already been promulgated by eminent natural inquirers, as were set forth by the vitalists of the early period.

The botanist Hanstein\* has given unequivocal utterance to such ideas. Starting from the fact that the organs of animals and plants show a definite conformation according to the species from which they are descended, Hanstein arrives at the conclusion that there is inherent in living organisms some special formative power (*Eigengestaltungskraft*), which has nothing whatever to do with the forces of inorganic nature. "As long as it is a correct principle of science," says Hanstein, "that there must be different causes where there are different effects, it cannot be legitimately maintained that the formative processes of organisms which are seen constantly to strive towards some predetermined end are nothing but the combined effects of forces inherent in atoms and active as rays or vibrations." In this "special formative power" of Hanstein we recognise at once, and in unmodified form, the *nitus formativus* of the vitalists. True, Hanstein admits that physical and chemical forces, such as act in lifeless bodies, also come into play by way of supplement to

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\* Hanstein. *Das Protoplasma als Träger der pflanzlichen und thierischen Lebensverrichtungen.* Heidelberg. 1880.

the special formative forces of living organisms, but *specific* phenomena of life he refers exclusively to special formative powers. Also he sees the activity of these forces in the phenomena of the heliotropism of plants, of the geotropism of the roots and trunks of trees, of the chemotropism of zoospores, and generally in all phenomena of irritation, while the same force is also discerned by him in what the zoölogy of earlier times called instinct. Indeed it is a remarkable sign that Hanstein at this late day conceives instinct as a *force* in the same sense as physical forces are conceived, that is, as the cause of motions. Yet Hanstein regards this assumption not only as necessary but also as highly useful. "It must be maintained in the face of all objections, that this hypothesis is for the time being the simplest; that if it does not exactly explain the majority of the observed phenomena of life it yet puts them under a monistic (!) point of view; that it is not in contradiction with other phenomena, and does not make out of a small miracle a greater one, but while it solves (!) many riddles, reduces most others to a single simpler one." These are the words of a serious naturalist at the end of the nineteenth century! The same views on this point, though not so clearly expressed, are also maintained by the well-known botanist Kerner von Marilaun and the pathologist Rindfleisch. Indeed, from many quarters a frank and unmistakable demand is made for the recognition of a "neo-vitalism."

Quite different from this pronounced reaction towards mysticism is the vitalism which the physiologist Bunge professes. Bunge is a man of sound philosophical and critical ability; and if he openly sets himself up for a vitalist he produces by so doing a false impression, for his vitalism, if closely examined, will be found to be something quite different from the vitalism of the old school.

True, Bunge openly takes his stand on the ground of vitalism, when he says,\* "If you assert in refutation of vitalism that there are no other factors active in living beings save the forces and materials of unanimated nature alone, I must dispute your assertion."

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\* *Lehrbuch der physiologischen und pathologischen Chemie.* Second Edition.  
Leipsic. 1889.

Yet we shall observe if we follow Bunge a little further that his vitalism is purely a subjective idealism, which has sprung from the perception that it is reversing the true order of things to attempt to explain psychical processes by a mechanics of atoms. Bunge says: "The essence of vitalism consists simply in taking the only right course of knowledge, that is, in starting from the known, or the inner world, in attempting to explain the unknown, or outer world." We see thus that Bunge is on the right path by his so-called vitalism for avoiding the *one* cause of reaction towards the old mysticism—namely, the impossibility of resolving psychical processes by the physics and chemistry of matter. But unfortunately at this point Bunge comes to a halt. Instead of drawing from this perception that the whole physical world consists simply of compounds of sensations or of percepts, as its ultimate and unavoidable consequence a demand for a monistic conception of the world, Bunge still lingers in the old dualistic notion of a contrariety between a living and a lifeless, a dead and an ensouled nature, to which he gives expression in the above-cited words, and sees no other way out of the difficulty at present than to go on resignedly working away in the old mechanical direction, which by his own confession is a reversion of the true method.

#### THE MONISTIC POINT OF VIEW.

They who have fought their way through to a monistic point of view will have little difficulty in finding a complete and satisfactory solution of this dilemma. If the world of bodies consists solely of compounds of sensations, then the whole world is a unitary existence, for the supposed and otherwise irreconcilable contrariety of a physical world and a psychical world is dissipated. When, therefore, we investigate the physical world in a scientific or physical manner, we really investigate, in so doing, the laws according to which our percepts or notions of the physical world arrange themselves and combine to form higher compounds, that is, we are really pursuing a psychological inquiry. All natural science consists of such work, and the so-called "mechanical" method of research which has hitherto universally obtained, and by its great successes proved it-

self so wonderfully productive, is not only fraught with no danger for him who is conscious that mechanism is not a thing which is opposed to and exists beyond the soul, but even finds its full justification. From a monistic point of view, therefore, the mechanical method of inquiry is not only, as Bunge believes, a provisional expediency, but actually an absolute necessity.

But in this case the mechanical method of inquiry must also be able to explain the phenomena of living as well as of lifeless bodies ; in both cases we have to deal with bodies, and for both, the laws of those complexes of sensations which we call bodies must possess validity. But it is altogether a different undertaking to attempt to explain by phenomena of the physical world simple sensations, which unlike our conceptions of bodies are not complexes. An endeavor of this kind, such as the materialists are constantly but vainly undertaking, is like the absurd attempt to divide the series of whole numbers by a number which is not numerical unity. In the one case as in the other, of course, the computation cannot be performed.

The main obstacle that has stood in the way of the establishment of monistic conceptions is the supposed contrariety of body and soul, an idea familiar to human thought since the earliest times. In fact, it would seem at first blush a wonderful thing that this ancient idea of the ensoulment of physical things could have maintained itself with such tenacity till so late a day. If the physical world is in reality only conception, it seems at first almost absurd to think of a conception as being ensouled. Yet no one doubts for a moment that other human beings are ensouled, and only a few, that animals are ensouled. It is worth while to look more closely into this paradox. When we do so, it will be found that exactly in a monistic point of view is the corroboration, nay, the necessity, of this interesting phenomenon to be found. The idea of the ensoulment of physical objects or bodies is the first beginning of a psychological analysis of our conceptions of bodies. By thinking of a body as ensouled, man makes the first step in the analysis of his own conception of that body.

A little reflexion will at once make this clear. We need only look somewhat closely at our conception of our own body. The his-

tory of the development of the soul, as Wundt\* and Preyer† have followed it in the history of the development of the mind of man and especially of the child, shows us in outline how our conception of our own individual body has arisen. The formation of this apparently compact ego is an inductive process. The first beginnings are made unconsciously, by primitive sensations being brought into mutual connexion. These are the original, as yet unconscious, individual egos of the different parts of the body, which subsequently we consciously distinguish. But, owing to the fact that these individual egos, in the course of a rather long development, are gradually referred to the egos of individual sense-organs, particularly to that of the sense of sight, as to something constant, the single, unified conception of a whole bodily ego is slowly developed, which, by the constant acquisition of new elements gradually reaches higher and higher stages of consciousness; for what we call consciousness is a fact of enormous comprehension and intricacy, which we can reverse, so to speak, and by the gradual elimination of single component parts, such as takes place, for example, in partial and total hypnosis, dreams, narcosis, and so forth, actually analyse into unconscious sensations. While the conscious ego by the intusception of new elements is thus constantly widening, the notion of the ego is slowly formed which every normal man possesses, and which subsequently also he constantly extends. These are, of course, only the first beginnings of our investigations in psychogenesis, and many essential elements of our knowledge in this domain are still wanting. But these facts are now quite settled, that the formation of our notion of our own body is nothing more or less than the outgrowth and combination of certain simple sensations, images, thoughts, judgments, and so forth, which constantly increase in complexity and ultimately yield a product of extremest intricacy, namely, our notion of our bodily ego, so simple to superficial inspection.

Here, in any event, we have a first equation: What appears to

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\* Wundt, *Vorlesungen über Menschen- und Thierseele*. Leipsic, 1863.

† Preyer, *Die Seele des Kindes. Beobachtungen über die geistige Entwicklung in den ersten Lebensjahren*. Leipsic, 1881.

us as so compact and single an object as our body, is in reality an extremely complex synthesis of our own mind, the individual elements of which psychogenetic inquiry has only revealed with great difficulty, and that only to a very limited extent. But just as our notion of our own body is only a simple expression, a symbol, for an extremely complex psychical synthesis, such also are our notions of all other bodies, in the first instance of all other men, but then also of all animals and plants down to unicellular organisms, nay, even into the dark province of molecules and atoms which make up the lifeless bodies of nature. The formation of our notion of the world of bodies is nothing else than an extension of our own Psyche.

When, therefore, we picture to ourselves a body as ensouled in the same way that we conceive our own body ensouled, with these or those sensations or groups of sensations, in doing this we only analyse our apparently single and compact notion of the body, be it of a man or of an animal or what not, according to the standard of our present knowledge, into the simpler component elements out of which it has been psychogenetically constructed. Proceeding rigorously and logically from our first equation we obtain thus by conceiving bodies as ensouled a multitude of new equations, from many of which we can eliminate and isolate certain factors more easily and distinctly than from the first. But we have no right, if we are determined to be logical and consistent, to stop with the conception of ensoulment at man, as early times did, or at animals, as is now usually done, or, for that matter, at organisms at all: it is an inexorable consequence which, foreshadowed by ancient philosophers, has been more distinctly expressed in modern philosophy, and in natural science especially set forth and expounded with great lucidity by Haeckel, that *all* bodies must be regarded as ensouled, though ensouled it may be in different ways.

Thus from the monistic point of view the apparent dualism of the world of body and the world of soul finds its just appreciation. Monism alone disposes in a simple and satisfactory manner of the old, old problem of the relations of the body to the soul, of the material to the spiritual world,—a problem whose insolubility from the point of view of dualism again threatens to drive us into the arms

of vitalism. While at the same time monism also tears down the last barrier which Bunge is disposed to see between living and lifeless nature—namely, ensoulment.

#### CELLULAR PHYSIOLOGY.

If on the one hand we can justly cherish the hope that the increasing extension of the monistic world-view in natural science will ward off the dangers of a reaction to the old vitalism, the fact nevertheless remains that in treading the beaten paths we are making no progress whatever in physiology, and that we have stood still for years on the same spot and not approached a single step nearer our goal of explaining the elementary phenomena of life.

We have reached a turning-point in physiological research which could scarcely be made more prominent. The reappearance of vital force is a token of it. As before all great crises of history portentous spirits appear to clairvoyant people, so in our days the ghost of the old vital force has loomed up in the minds of some of our natural inquirers.

But striking and obvious as the fact is that we can no longer approach by the old paths of research an explanation of the elementary phenomena of life, still, it is exactly as obvious and striking in what direction there is the only chance or hope of our approaching our goal.

We have traced the vital processes of man in physiology back to the point where they are lost in the cell. Now, what is more reasonable than that we should seek them out in the cell? In the muscle-cell is hidden the riddle of muscle-movement, in the lymph-cell is hidden the causes of secretion, in the epithelial cell is buried the problem of resorption, and so on. The theory of the cell has long since disclosed that the cell is the elementary foundation-stone of the living body, the "elementary organism" itself, that in which the processes of life have their seat; anatomy and evolution, zoölogy and botany, have long since realised the significance of this fact, and the wonderful development of these sciences has furnished a brilliant proof of the fruitfulness of this branch of inquiry. Only in physiology was the simple, obvious, and logical consequence over-

looked, and until very recently not practically applied, that if physiology regards it at all as her task to inquire into the phenomena of life, she must seek these phenomena at the spot where they have their origin, at the focus of life-processes, in the *cell*. If physiology, therefore, is not simply content with confirming the knowledge which is already gained of the crude mechanical actions of the human body, but makes it its object to explain clearly elementary and general phenomena of life, it can accomplish this object only as cellular physiology.

It may appear paradoxical, that although nearly half a century has elapsed since Rudolf Virchow first enunciated in several classical works the cellular principle as the basis of all organic inquiry, a basis on which to-day, indeed, all our ideas in pathology are constructed, physiology still is only just beginning to develop out of a physiology of organs into a physiology of cells. Yet this is the true and normal course of development of science which always advances from the crude to the delicate. And it would, therefore, be imardonable ingratitude and a mistaking of the mode of development of human knowledge if we should seek in the least to underrate the high importance of the physiological research of the past epoch, on whose shoulders in fact we stand, and with whose results we more or less consciously continue our work. Further, in our judgment of the course of development of physiological research, a factor must not be overlooked which controls the development of every science, namely, the psychological factor of fashion. The development of every science depends on the stupendous influence of great discoveries. Wherever we cast our eye in the history of inquiry, we find that great discoveries such as, to take the case of physiology, are represented in the works of Ludwig, Claude Bernard, Du Bois-Reymond, and Liebig, deflect interest from other fields and induce a great multitude of inquirers to pursue research in the same direction with the same methods, especially when these methods have proved themselves so wonderfully fruitful as in the cases adduced. Thus, certain departments of inquiry become, in connexion with epoch-making performances, fashionable, and the interest of thinkers in others subsides. But an equalisation in the course of time is always

re-effectuated, for every field of inquiry, every method of inquiry is finite and exhausts itself in time. We have now reached just such a point in physiology: the physiology of organs is in its period of exhaustion. Also the method of cellular physiology will exhaust itself in the course of time, and its place will be taken by other methods which the present state of the problem do not yet require.

But for the present the future belongs to cellular physiology. There are, it is true, inquirers who, although they are convinced of the present necessity of a cellular physiology, and see perfectly well that the cell as the focus of the processes of life must now constitute the real object of research, yet doubt for technical reasons whether it is possible to get at the riddles of life as they exist in the cell. It may, therefore, be justly demanded that some way, some methods be shown with which a cellular physiology can be founded. The doubt of the feasibility of this undertaking is in great part the outcome of a phenomenon, which, unfortunately we must say, has characterised physiology ever since the death of Johannes Müller, namely, the total lack of a comparative physiology. Physiology has not yet entered on this rich inheritance of the great master. How many among the physiologists of the day are acquainted with other objects of experiment than the dog, the rabbit, the guinea-pig, the frog, and a few other higher animals! To how many are the numerous and beautiful objects of experiment known which the wonderful luxuriance of the lower animal world offers! And yet just among these objects are to be found the forms which are best adapted to a cellular-physiological solution of physiological problems.

Naturally, if we believe we are limited, in our cellular-physiological treatment of the riddles of motion, digestion, and respiration, solely to man and the higher animals, we shall encounter in our investigation of the living muscle-cell, lymph-cell, epithelial cell, and so forth, more or less insuperable technical difficulties. And yet the splendid researches of Heidenhain on secretion, digestion, lymph-formation, and so forth, have shown what good results the cellular-physiological method can achieve even here. Well-planned histological experiments, such as those which put the liv-

ing cell in its intact connexion with the remaining woof of the body under given conditions, and then investigate the results in the suddenly slaughtered animal, to get from such experiments light on the processes peculiar to the condition of life, undoubtedly furnish the germ of much valuable knowledge. But it is of the very nature of these experiments that they must always remain difficult and restricted, for the *living* object, the tissue-cell, is accessible to microscopic investigation only with the greatest difficulty. Comparatively small difficulties in this respect are offered only by the free-living cells of the organism, as, for example, by the leucocytes or blood-corpuscles. And as a fact, by the researches of Metschnikoff, Massart, Buchner, Gabritchevsky, and many others, we have recently acquired some important and wide-reaching experimental knowledge concerning the vital phenomena of these very objects.

But if we place ourselves at the point of view of comparative physiology which Johannes Müller represented throughout his whole life with such success and energy, an infinitely broad perspective opens itself up for cellular investigations. A comparative view shows one fact of fundamental importance, namely, that elementary life-phenomena are inherent in every cell, whether it be a cell from the tissues of higher animals or from the tissues of lower animals, whether it be a cell of a plant, or, lastly, a free cell, an independent unicellular organism. Every one of these cells shows the general phenomena of life, as they lie at the basis of all life, in their individual form. With this knowledge, all that it is necessary for the inquirer to do is to select for every special object of experiment the fittest objects from the wealth of forms presented, and with a little knowledge of the animal and plant world, such forms really obtrude themselves on the attention of the experimenter. Accordingly, it is no longer necessary to cleave so timorously to the tissue-cells of the higher vertebrate animals, which, while alive and in normal environment, we can only use for microscopic experiments in the rarest and most exceptional cases; which further, the moment they are isolated from their tissues, are no longer in normal conditions and quickly die or give reactions that may easily lead to wrong conclusions and to errors. Much more favorable are the tissue-cells of

many invertebrate, cold-blooded animals or plants which can be more easily investigated in approximately normal conditions of life ; yet even these, as a rule, will not outlast protracted experiments. But here appear as the fittest imaginable objects, for cellular-physiological purposes, free-living unicellular organisms—namely, protists. They seem to be created by nature expressly for the physiologist, for they possess, besides great powers of resistance, the incalculable advantage of existing in a limitless variety of form, and of exhibiting, as the lowest organisms that exist, all phenomena of life in their simplest conditions, such as are not to be found among cells which are united to form tissues, on account of their one-sided adaptation to the common life of the cellular colony.

Concerning the application of experimental physiological methods to the cell, we need be in no perplexity as to which we shall choose. In the luxuriant multiplicity of form which this world presents, there can always be found for every purpose a great number of suitable objects to which the most different special methods can be capitally applied.

We can, to begin with the simplest method, apply in the easiest manner imaginable to the free-living cell the method of simple microscopic observation of vital processes. In this manner mere observation has furnished us knowledge of the individual life-phenomena of cells in many details and also of their mutual connexion. Among the most recent achievements of this simple method may be mentioned only the extremely valuable knowledge concerning the more delicate and extremely minute circumstances of fecundation and propagation which Flemming, Van Beneden, the Hertwigs, Strasburger, Boveri, and many others have gained in recent years, partly from living cells and partly from cells fixed in definite conditions of life.

Moreover, we can also conduct under the microscope vivisectional operations on unicellular organisms in exactly the same scope and with greater methodical precision than can be done on the higher animals. Several inquirers, as Gruber, Balbiani, and Hofer, have already trodden this path with great success, and a considerable group of researches has shown distinctly enough the fruitful-

ness which this cellular vivisectional method of operation promises for the treatment of general physiological problems. With this vivisectional method also Roux, the Hertwigs, and others conducted their splendid investigations on the "mechanics of animal evolution," by showing what functions in the development of animals fall to the lot of the different parts of the egg-cell or to the first filial cells that proceed from their division.

We can also apply here, in its whole extent, that powerful physiological method known as the method of irritation, and investigate the effects of different kinds of irritation on the life-phenomena of the cell or of different cell-forms. The vegetable physiologists have already collected a great mass of material in this field. But also in the department of animal physiology a great number of recent works have endeavored to prove that the phenomenon of irritation which takes place on the application of chemical, mechanical, thermal, galvanic, and luminous stimuli to unicellular organisms are of the greatest importance for the phenomena of life generally.

Finally, we can approach the life-phenomena of the cell chemically, although in this direction only the very first beginnings have been made, seeing that the microchemical methods have been hitherto little developed. Nevertheless, the labors of Miescher, Kossel, Altmann, Zacharias, Löwitt, and others have already shown that the microchemical investigation of the cell has a future of great promise.

In the meantime, it is a gratuitous task to enumerate the individual methods that are capable of application in the domain of physiology. All methods may be used which the special experimental object of the moment requires.

Ever and anon in physiology must we revert to the point of view which formerly so fruitfully shaped the research of our great master, Johannes Müller. Johannes Müller, during his whole life, practically and theoretically represented the view that there is no one physiological method, but that every method is admissible which leads to the goal. He always chose his method to fit his problem and never, as is now so often done, the problem to fit his method. Not the method, but the *problem* of physiology is single

and unique. In the solution of this problem physiology employs chemical and physical, anatomical and developmental, zoölogical and botanical, mathematical and philosophical methods of inquiry, according to what the special object in view requires. But all methods shall lead to one goal only, the solution of the question, What is Life?

MAX VERWORN.

JENA.

## KANT'S DOCTRINE OF THE SCHEMATA.

WITH ONE accord the exegetists find in this subject of the "Kritik" no positive contribution to our knowledge. Professor Green (Vol. II, p. 39) says :

"And since the categories themselves are nothing else than the forms of this unity, as so exercised, nothing is needed to mediate between them and the objects. The 'Transcendental Analytic' would have been much simpler if the account of the categories prior to the 'Deduction' had been omitted. The categories then would have appeared in that separate form in which they are made to correspond to the classification of logical judgments (a classification which is only of value in relation to the syllogism, and which represents as little as the syllogism the process by which intelligent experience is formed). We should have had (1) what is fancifully called the 'Deduction of the Categories,' exhibiting the unity of apperception, derived from the presence of the 'transcendental ego' to all feelings, as the condition of the possibility of all experience, and then (2) without surplusage of distinction between 'categories' and 'schemata,' an account of the principles of pure understanding (as given in the third section of the 'System of Principles'), i. e. of 'the general rules of unity in the synthesis of phenomena,' as arising out of the application of the thinking unit to the 'manifold of sense,' and thus involving 'determination of time.'"

I understand Professor Green to say that the schema is unnecessary and that it is unnecessary because the category and the object to which the category is applied have a common source in the transcendental unity. Since the object and the category are alike forms of the unity of consciousness, the category does not need any schema in order to apply to the object. Hence he speaks of the division into categories and schemata as a "surplusage of distinction."

Prof. Edward Caird says (Vol. I, p. 435, "The Critical Philosophy of Kant"):

"It is important here to observe that the schematism is made necessary simply and solely by Kant's view of self-consciousness."

Again (p. 437):

"If we thus work out the idea of the universal and the particular, of conception and perception, in the judgment, we see that Kant's mediation of each moment by the others must necessarily reduce them to relative elements which exist only in this unity. The reciprocity of determination between the two terms, which is thus disclosed, reduces their difference into a difference of correlative elements; and at the same time, it makes unnecessary the interposition of any middle term to connect them."

Again (p. 439):

"We can, indeed, vindicate Kant to some extent by referring to what he elsewhere says, to the effect (1) that the synthesis of imagination, by which perception is brought about, is conformable to the categories, and (2) that the consciousness of self in inner experience is possible only in relation to outer experience. But when we make the correction necessitated by these two admissions, there is no longer any need to schematise the conception, with reference to its use as a predicate for perceptions given independently."

I understand Professor Caird to teach that the schemata are unnecessary and to go to the point of vindicating Kant for this confusion into which he fell. Dr. Adickes in his edition of the "Kritik" (p. 171, note) says:

"Das dunkelste Stück der 'Kritik' haben wir hier vor uns, von Manchen deshalb für das tiefstinnige gehalten. Verschiedenartige Lösungen des Räthsels sind versucht, oft äußerst verwickelte. Ich biete eine neue, sehr einfache, die freilich den Kantgläubigen sehr gewagt, wenn nicht sogar gottlos oder frivol dünken wird. Nach meiner Ansicht ist dem Abschnitt über den Schematismus gar kein wissenschaftlicher Werth beizumessen, da er nur aus systematischen Gründen später in den 'kurzen Abriss' eingefügt ist."

Dr. Adickes thinks there is no difficulty to be met. The categories are at work upon the objects and do not need any *tertium quid* to mediate. In the second place, if there were any such difficulty, it would be insurmountable. Kant creates the difficulty by following formal logic.

We have given the interpretations of three leading students of

Kant. They insist that Kant's doctrine of the schemata is not an addition to the thought-movement of the "Kritik." While the weight of this authority is alarming to any student, it is evident that the probabilities are against them. A great thinker does not err in his doctrine. He may fool himself, even as a child would, in setting forth the ultimate significance of his doctrine ; but the doctrine itself cannot be vain. It is the expression of a thought-movement. It is like the arm of a man's body. The only possible mistake is one of use.

What is Kant's doctrine of the schemata? It is a section in the analysis of the third subject in the "Kritik." First comes the *Æsthetic*, occupied with a study of space and time. Then comes the Deduction of the Categories. Then comes a deduction of the judging-power (*Urtheilskraft*). The judging-power Kant considers from two points of view. First, there are conditions in the subject. Second, there are conditions in the object. That is, in order to put a category to work, there are necessary these conditions. The conditions in the subject are called schemata ; the conditions in the object are called principles (*Grundsätze*). I understand Kant to consider in the section called, *Von dem Schematismus der reinen Verstandesbegriffe*, the conditions of the judging process, viewed subjectively ; and in the section, *System aller Grundsätze des reinen Verstandes*, the conditions of the judging process, viewed objectively. These two considerations form the doctrine which he calls, *Von der transzendentalen Urtheilskraft überhaupt*. We are concerned with the first section, his doctrine of the schemata, that is, his doctrine of the subjective conditions of the judging process. Let us reproduce his analysis.

In the introduction (p. 168, Adickes's edition), Kant distinguishes between the *Verstand* and the *Urtheilskraft*. The *Verstand* is the legislating activity—laying down rules ; the *Urtheilskraft* is the administrating activity—bringing an object under a rule. The first activity has been analysed in the Deduction. We are now occupied with the *Urtheilskraft*. This consideration belongs entirely to transcendental logic. It is a study of the power of judging, not of the form of anything,—hence formal logic has nothing to say here.

This transcendental doctrine of the power to judge falls into two divisions. I give Kant's words (p. 170):

"Das erste, welches von der sinnlichen Bedingung handelt, unter welcher reine Verstandesbegriffe allein gebraucht werden können, d. i. von dem Schematismus des reinen Verstandes; das zweite aber von denen synthetischen Urtheilen, welche aus reinen Verstandesbegriffen unter diesen Bedingungen *a priori* herfliessen, und allen übrigen Erkenntnissen *a priori* zum Grunde liegen, d. i. von den Grundsätzen des reinen Verstandes."

I understand that the first considers the judging power as it is in the subject; the second, the judging power as it is in the object. Kant proceeds with his doctrine (p. 171):

"1. Whenever an object is brought under a concept, the representation of the object must be like-in-kind (*gleichartig*) to the concept—that is, the concept must contain that which is represented in the object.

"2. The pure concept of the understanding is not like-in-kind to the empirical intuition, and can never be met in it.

"3. How, then, can the empirical intuition be subsumed under the pure concept? This is the problem to be solved.

"4. The meeting-ground must be that which is like-in-kind to the intuition and the concept.

"5. This mediator—on the one hand, like-in-kind to the concept, on the other, to the intuition—is the transcendental Schema.

"6. Time is a Schema. It is like-in-kind to the concept in two respects,—it is universal and rests upon a rule. It is like-in-kind to the phenomenon in so far as it is contained in every empirical representation of the manifold.

"7. The necessity for the Schema cannot be escaped by supposing the categories to apply to thought-objects, or to things-in-themselves. The category must apply to the object given in intuition. In the pure concepts there are, in addition to the categorising activity, form-conditions of the intuiting activity. And in these form-conditions are contained the conditions that let the category work in the object. This condition of a category is the Schema of this category.

"8. The Schema is a product of the power to synthetise into forms. It is to be distinguished from the image. The image (*Bild*) is the form for objects; the Schema is the form for concepts.

"9. The Schema is the condition of the image. The word 'dog,' and the words, 'my dog, Jack,' stand for different processes. The one is general, the other particular. The power in the general process regulates the power in the particular process. The Schema is a transcendental product of the power to synthetise into forms; the image is an empirical product. The relation of a Schema to an image is much as the relation of a category to an object."

Here the doctrine ends and then follows a description of the schemata as related to the categories.

"a. Quantity.

"The pure Schema of all quantities is number.

"b. Reality.

"Reality is the quantity of something as filling time. It is the finished synthesis. The Schema of this finished synthesis is the synthetising activity.

"c. Substance.

"The Schema of substance is permanence.

"d. Causation.

"The Schema of causation is law. [This seems what Kant wished to say.]

"e. Reciprocal Interaction.

"The Schema of the reciprocal interaction of two substances manifest in their accidents is that the determination of the accident be at the same time and according to a law.

"f. Possibility.

"The Schema of that which is possible is that the synthesis of different representations must accord with the time-conditions. [Does he not mean that the Schema of the possible is the principle of contradiction ?]

"g. Actuality (*Wirklichkeit*).

"The Schema of the actual is existence in a definite time.

"h. Necessity.

"The Schema of necessity is the existence of an object continuously."

Kant interprets his doctrine in the following way. The Schema of the category, Quantity, is the synthesis of time itself in the succession apprehending an object. The Schema of the category, Quality, is the synthesis of the sensation with the representation of time. The Schema of the category, Relation, is the continuous chain of perceptions according to a time-rule. The Schema of the category, Modality, is time itself. The Schemata are thus *a priori* time-determinations according to a rule. They follow the categories and relate to the time-series, the time-content, the time-order, and the time-totality. From this it is clear that the schematism of the understanding, through the transcendental synthesis of the imagining power, is no more than the unity of all the manifold of intuition in the inner sense. It comes thus indirectly to the apperceiving unity.

I wish to consider the question of the schemata from two points

of view. First, Is there any such reality in the world of the mental process as Kant indicates? Second, Is his doctrine an adequate analysis of this reality?

In the first place, Is there any part of the mental process we may call a Schema? Professor Green says, No. The doctrine is a "surplusage of distinction."

"The peculiarity in Kant's view of the 'schemata,' as a *tertium quid* between the categories and sensible intuitions, arises from the separation which he makes between these as constituting severally the form and the matter of knowledge." (Vol. II, p. 35.)

This sentence explains the peculiarity in Professor Green's interpretation. The schema is not the kind of *tertium quid* that Professor Green imagines. The effort of Professor Green is to show that the category takes hold of the material immediately. This is Kant's doctrine also. The schema is not a bridge; it is a third party that brings two other people together. The marriage of the two people may have been planned from the foundation of the world, but it was also planned that a third person should bring them together. Kant will admit the contention of Professor Green and still set forth his doctrine of the schematism.

#### What is a Schema?

How shall we explain the fact that Professor Green misses the doctrine of Kant? It is due to his point of view. Why should a point of view play such havoc? What is it? a category? an intuition? Do we not rather understand by it the way in which categories are applied to facts? We ask a man to be careful of his view-point. He does not change his categories. He does not get a new set of facts. It is the view-point that explains the new conclusion. I know of no surer way to the discovery of the reality Kant saw in his schema, than an attempt to explain the power of the view-point.

We are told that Saul started from Jerusalem to Damascus upon a definite mission. He reached Damascus and did a work the exact opposite of that he intended. This change is explained in terms of an experience along the way. The change was so profound that the man took a new name, Paul. The facts did not change. The categories did not change. We say his way of looking at facts

changed. That is, there was a new condition for the application of the categories. . This new condition stands above the fact and the category, and determines the application. We say it is an experience that determines a man's theology. There are types of experience. And a type of experience is a schema.

Professor Newton and a wild pagan stand on a hill and see the eclipse of the sun. To the pagan the event is the beginning of a series of horrible calamities to himself and his tribe ; to Professor Newton the event brings the most longed-for experience of the year. Are we to explain the difference in terms of a change of facts, or of categories. It will not do to say that one uses the category of causation. Causation is not a category, unless both men use it. The difference can be explained only by a series of schemata. Again, nature to Aristotle is not the nature that Helmholtz knows. Aristotle could see no truth in the atomistic view of things. The doctrine of atoms was to him unnecessary and contradictory. Why was there no place for an atom in the thought of Aristotle? Aristotle had no place for change. It was nothing real. It was simply an incident in the transition from the possible to the actual. When we see these two facts, we may understand why it was that physics, as a science, was impossible until thought had cast the forms of Aristotle ; but this is after all an explanation of nothing. This break from the control of Aristotle, Lasswitz has called "der grösste Kampf, der auf dem Gebiete der Erkenntniß ausgefochten wurde, welcher im 17. Jahrhundert die aristotelische Physik stürzte." ("Geschichte der Atomistik," p. 85.)

What were the weapons in this royal battle of the seventeenth century? They were neither facts nor categories. The question was, how to apply categories to facts. And the victory was the victory of one way of categorising the facts. It was a battle between the schemata,—causality and substantiality. Lasswitz in his great work, "Geschichte der Atomistik," p. 78, says :

"Die Entwicklung der Physik als selbständiger Wissenschaft ist der Kampf gegen den aristotelischen Begriff vom Körper, die Emancipation von der Theorie der substanziellen Formen. Aber wissenschaftliche Begriffe werden nicht plötzlich durch die That des Genius geschaffen ; sie entstehen durch allmähliche Um-

bildung der vorhandenen Erkenntnissmittel, durch Bewusstwerden bisher der Menschheit verborgener Denkmittel."

Again, p. 44 :

"Das Denkmittel der Substantialität beherrscht die gesammte Metaphysik, insoweit sie vom Gedankenkreise Platons abhängig ist ; das Denkmittel der Causalität hat in der modernen Wissenschaft seine Triumphe gefeiert."

The power of Aristotle was the power of the schema, Substantiality. The substitution of causality, as a schema, for substantiality, was the condition of the birth of physics.

Examples like this one, in which a revolution is made, can be multiplied. Lasswitz explains these revolutions as above pointed out. One *Denkmittel* is substituted for another. In the study of nature he finds the *Denkmitteln*, *Substantialität*, *Causalität*, *Varianz*, *Ästhetik*. These *Denkmitteln* of Lasswitz I call schema. And a revolution in any science, for example, the transition from alchemy to chemistry, is at bottom the substitution of one schema for another. If still further evidence is needed to prove that there is such a reality as Kant is analysing, let the reader consider this set of facts. History tells us that human life grows by becoming more complex. At one time it is simple. One fact occupies its interest ; the fact of the absolute. Then the fact of law is seen. Conduct becomes moral, and nature is orderly. Men are united and held firmly together by a creed. Then a state or a church holds them. Nature is first orderly, then mathematical, then chemical, then geological. Human life is static, corrupt, progressive. Let these great facts be explained.

Let the reader reflect upon these transitions until he gets the cause of them. Human life is moral, this moral life is religious, this religious moral life is first institutional, then individual. We see in nature caprice ; then we see mathematics everywhere. Is mathematics, as a method of seeing things, to be explained in terms of the categories? Is the transition from the mathematical to the dynamical way of seeing things to be explained in terms of the facts, or the categories? It seems, then, that consciousness in its movement into the complex, at every point of its enlargement, manifests a reality not considered in the analysis of Professor Green. It is

not a fact, it is not a category, it is that which determines the way we see things—the manner in which the facts are categorised. It is called a view-point. It is called an experience. It is called religion. It is also called materialism. The name is legion; the reality is something that makes us see things in a given way. It is infallible, but it is not universal. The only deliverance is to substitute a like ruler.

Our second point is to ask if Kant's doctrine is adequate to the reality. There is a schema. Is Kant's analysis of it satisfactory? What is a schema? It is that which renders possible the application of a category to a phenomenon. Does the category need any such mediator? Professor Green says, No. In a general way, we have shown that there is such a reality; but let us see it work in a mental process. The schema of substance, says Kant, is permanence. What does this mean?

Substance, says Aristotle, is "whatever may be the cause of being,"—"the what" a certain thing is, on the removal of which the whole is taken away" ("Metaphysik," Bk. IV, Ch. 8). Substance for the atomist is that which remains after the last possible division. (See "Lasswitz," p. 68.)

Substance in the human life is that which persists forever. Substance in the universal sense is that source of all things—absolutely self-contained—in which there is not even "the shadow of a turning." Now I understand Kant to say that the condition of such a proposition is the schema, permanence. That is, permanence is that without which substance cannot be thought. Substance is, so to say, a definite permanence. But what is permanence? Is it anything else than a concept? Yes, a vast deal else. It is a reality seen for the first time by the Hindu. It was Brahma. It was the schema of the ascetic life. It was one of the schemata of the Buddhist doctrine of Karma. It was one of the schemata of law in nature. It is also a power in the doctrine of institutions. The schema is the seed that introduces the tree into the earth. This is a condition of life. The mind declines to affirm that substance changes. It is the power of the schema. Its only means of release is to substitute evolution for permanence. This I understand to be the point of Kant.

But does Kant appreciate the reality he saw? He begins by saying that time is a schema. Then comes a caution. He next reminds us that a schema is not an image. Then he will deliver us from the dry and tedious analysis which the doctrine demands,—and will give a list of schemata, following the table of the categories. His conclusion is that:

"Die Schemata sind daher nichts als Zeitbestimmungen *a priori* nach Regeln, und diese gehen nach der Ordnung der Kategorien, auf die Zeitreihe, den Zeitinhalt, die Zeitordnung, endlich den Zeitinbegriff in Ansehung aller möglichen Gegenstände."

I see nothing in this conclusion at all adequate to the wealth of meaning in the schemata. Kant could not see Fichte and Hegel and Schopenhauer in himself. He insisted that they were not there. History has overruled him. Kant did not have the history of thought before him—and hence he could not give his "dry and tedious analysis that the doctrine of the schemata demanded." The time had not come for an *Entwickelungsgeschichte* of the special sciences. Hence Kant could not see the power of the schema. But he saw the reality. He seized the fact; he lacked the schemata for an appreciation of his discovery. He did not develop his mine. And this is our last word.

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## THE EXEMPTION OF WOMEN FROM LABOR.

THE very original and somewhat startling plea of M. G. Ferrero in the January *Monist*, for the complete exemption of women from bread-winning labor is worthy of the author's chivalrous nature, and demands thoughtful consideration. One naturally feels impelled to accept his view, but such a crowd of practical objections at once arise that it becomes impossible to do so except in a very restricted sense. If he only means that women who actually bear children should be relieved from laborious physical activities during their productive period, nobody certainly ought to dissent, and it is to be hoped that the world has already got a long distance on the road toward such a result. But if he means that one-half of the human race should be and remain, from the standpoint of economics, non-producers, except in so far as the rearing of children is to be considered productive, the position cannot be maintained without important qualification.

So far as can be discovered from the article, its author proceeds upon the popular but erroneous assumption that every adult female in society is provided with a husband who is both able and willing to supply all her needs. To show how false this assumption is, let us glance for a moment at the conjugal statistics of the United States, which have been compiled for the first time in the history of the country for the census of 1890, but not yet published.\* These statistics show that at that date the number of female persons of all

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\* I am indebted for these figures to Mr. Henry Gannett of the Census Office, and to the Hon. Carroll D. Wright, Superintendent of Census, for permission to use them in advance of official publication.

ages in the United States was 30,554,370, of whom 17,183,988, or 56.24 per cent., were single. The important fact for our present purpose is the number or percentage of marriageable women who are in fact not married. It is found that about ten per cent. marry before the age of twenty, and a very few before the age of fifteen. As the statistics are compiled in five-year periods, it is impossible to obtain figures for any age between fifteen and twenty, although proper marriageability begins at about seventeen or eighteen. If we take twenty as the basis, it appears that there were 16,293,326 female persons of twenty years of age and upward of whom 3,228,338 were unmarried, which is nearly 20 per cent. If we take fifteen as the basis, the number of that age and upwards was 19,602,178, of whom 6,233,207 were unmarried, or nearly 32 per cent. The true mean is somewhere between these and may perhaps be safely put at 25 per cent. The unmarried are made up of maids, widows, and divorced persons, the last of which classes is so small that it need scarcely be considered for the present purpose. Omitting the actual numbers and using percentages only, the returns show that between the ages of twenty and twenty-five about 53 per cent. were without husbands, between twenty-five and thirty about 28 per cent., between thirty and forty-five about 20 per cent. After this the number of widows increases so rapidly that from forty-five to fifty-five the unmarried amount to 26 per cent., and of women over sixty-five years of age only a little over 35 per cent. have husbands. Nearly six per cent. of all women never marry; about ten per cent. of those between the ages of thirty-five and forty-five had not yet married, and more than one-fourth of those between the ages of twenty-five and thirty were still unmarried. Further details are unnecessary, enough having been said to show how large a proportion of marriageable women are for one cause or another without that male protection and support that M. Ferrero's argument assumes.

Many of these unattached women are doubtless cared for in varying degrees by other male relatives, but it is clear that this ought not to be, since the men, on his theory, should have wives and families of their own. Ignoring, for the sake of the argument, the large number of cases in which the husband proves incompetent

to support his family, and admitting that the 75 per cent. who have husbands are adequately provided with occupation in rearing their children, or, if childless, as a large proportion always are, in merely attending to the wants of their husbands, what shall be said of the 25 per cent. who have no husbands and are therefore deprived of this occupation? A considerable number of the younger widows, it is true, have families on their hands, but these soon grow up and no longer require their attention. But if the wife is incapable of any form of productive-labor, when she becomes a widow, and the support of her family devolves upon her alone, she is in an unfortunate position. Something more must be done than merely to nurse and protect her children. They must be fed, clothed, and housed.

M. Ferrero quotes, and quotes correctly, the economic law, or "paradox,"\* as I have called it, that female labor "tends to lower the marketable value of male labor." It has been proved that a man and his wife working in a factory only earn the same that the man would earn working alone. This gives rise to one of those economic fallacies which it is found so hard to dislodge. It is akin to the fallacy that machinery should be discouraged because it throws the laborer out of employment. It overlooks the broader truth that two laborers must produce more than one. It proceeds from the pessimistic point of view that economic conditions must always be such that some one besides the laborer will take all the product except just enough to keep him alive. I am far from advocating the increase of female factory labor, but such labor with prompt and certain wages is often preferred by women to the ceaseless toil of farm and dairy life, with the uncertainty of crops and markets. The whole economic argument of Ferrero applies as well to men as to women. The real need is a great reduction in both the amount and the irksomeness of all labor, a greater resort to natural forces through invention and labor-saving machinery, accompanied, as it will be if the embargo upon distribution can ever be removed, by a greatly increased production, so that both sexes may perform

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\* *The Psychic Factors of Civilisation*, p. 279.

only agreeable labor, may enjoy ample leisure, and at the same time may possess most of those material blessings which are requisite to the highest physical and spiritual well-being.

It could be successfully contended that a certain amount of productive labor, or, at least, of both physical and mental activity associated with the satisfaction of natural wants, is necessary, not only to health, but also to happiness, and this quite irrespective of sex. It might also be satisfactorily proved that in the present state of society, for all except the very poor, it would be better to equalise to some extent the nature of the activities of the two sexes, rather than still farther to divorce them. While there is no doubt that the sterner sex should perform the sterner duties, the prevailing notion that woman is made to remain forever indoors and inactive is, to say the least, extremely irrational and unhygienic.

Finally, what shall be said of the large and constantly increasing class of productive businesses which only involve manual exertion to a limited extent and largely consist in the exercise of various mental aptitudes? Take teaching as an example. Shall women be excluded from such fields? Shall society lose the benefits which the peculiarities of the female mind enable women to confer in many of these employments, where men are less efficient? No doubt there should be a considerable readjustment of the duties of the two sexes, and this seems to be in process of accomplishment in the natural course of things. The division of labor of which M. Ferrero speaks must go much farther than he intimates. He would confine it to one class of female labor, that of rearing families and gracing homes. While, so long as nature remains what it is, the majority of women will continue to perform that chief function, there is and always will be a minority more or less large and respectable who must perform other functions to which the sex shall prove itself adapted. And the question will even arise whether the domestic function is always to be considered sufficient to fill the whole life of woman. Wives and mothers are often endowed not only with aspirations beyond it but with powers and talents that demand an opportunity for their exercise. Such cases are destined to multiply with the upward tendency of society. Indeed, a division of labor is beginning to be

called for just here. It is found that without diminishing the efficiency of the domestic function or detracting from the emotional side of maternal life, much of the arduous part of home duty can be delegated by intelligent mothers to those who can do nothing higher, thus relieving the former from harassing occupations which lower rather than elevate their nature, and enabling them to attend to a nobler class of duties, such as education, charity work, social accomplishment, self-culture, or even authorship.

M. Ferrero does not say whether he would educate women or whether, like Rousseau, he would leave them to grow up under the influence of nature, but as education involves work on the part of the learner as well as of the teacher, it is to be inferred that he favors the latter *régime*. He speaks of beauty and grace as the chief charms of the sex, and hence the principal ends to be secured by exemption from work. He seems to refer to mere physical beauty and to ignore that higher beauty which beams from the intelligent eye and makes one quite forget that it may be set in a plain face. While it cannot be denied, as he points out, that ease and freedom from care produce symmetry and conserve beauty and grace, there will nevertheless always be plain women, and unless these possess something besides their "looks" to recommend them their chances of securing partners in life will be small. Moreover, that form of beauty which is purely physical is of short duration. It fades early, and the comeliest girl becomes a plain woman, or, when old, it may be, altogether ugly. But that form of beauty which is based on intelligence not only does not fade, but even increases with maturity. The first wrinkles only serve to give it strength, and it is at its highest when the radiant countenance shines forth under silvery hairs. The female child of nature is a wax doll, pretty to play with for a time and then put aside. The enlightened woman becomes the equal and companion of man, of whose society he can never tire. As man rises in the intellectual scale he demands more and more this substantial companionship of a wife. There will be a few cases, as our author states in a previous article,\* "of a *savant* marrying a

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\* *The Monist* for January, 1893, p. 232.

stupid, unintelligent wife," but these will grow rarer, and unless something is done to even up the sexes on the score of attainment, the number of unmarried is likely to increase. It was strongly maintained for a time that there was an antagonism between mental and physical development in women, and serious opposition was raised to giving girls a higher education, but at length statistics were appealed to and the objection was found to be a purely theoretical one.\*

The article of M. Ferrero would have interested me very little had he not professed to support his views with quite an array of facts from biology, which is the standpoint from which I have been in the habit of looking at such questions. Nothing is clearer than that man should be primarily studied as an animal, and every attempt to treat anthropological questions from a biological standpoint should be encouraged. But unfortunately thus far nearly every such attempt has resulted in a complete failure to make the proper application of the facts which biology furnishes. The fundamental fallacy, which I have written an entire volume to point out, is that of ignoring the psychic factor in man, i. e., of treating man *only* as an animal. Ferrero has not escaped this fallacy, and his undisciplined race of idle women would be little else than so many half-tamed animals let loose in society. But there are other fallacies which he, in common with most others who have approached the subject from that side, has been led into. The most important of these is his failure to understand the full meaning of sexual selection and the consequent sexual history of the animal kingdom. I have on several former occasions† endeavored to set forth this history in its broader outlines, and I need not re-elaborate it here. It will be

\* "Health Statistics of Female College Graduates," being Part V (pp. 471-532) of the *Sixteenth Annual Report of the Bureau of Statistics of Labor of Massachusetts*, August, 1885, by Carroll D. Wright, Chief of Bureau, Boston, 1885. I am indebted to the Hon. Carroll D. Wright, U. S. Commissioner of Labor and Superintendent of Census, for kindly calling my attention to this important report and placing the volume in my hands.

† *The Forum*, Vol. VI, New York, November, 1888, pp. 266-275; *Proceedings of the Biological Society of Washington*, Vol. V, Washington, 1890, pp. 40, 41; *The Psychic Factors of Civilisation*, Boston, 1893, pp. 86-89.

more profitable to consider certain of Ferrero's illustrations in the light of it. He maintains that throughout the higher forms of animal life there is a division of labor between the sexes whereby the male assists in the maintenance of the female, and argues that this is the secret of the greater longevity of such animals, while the often brief existence of lower forms is due to the lack of such a division of labor. He shows that in some birds there is a form of marriage and true co-operation of the sexes, and says that "the lion and the hyena, during mating-time, hunt only to provide food for the female, who remains passive," and that "in the monogamic and polygamic families of monkeys it is always the male or chief who guides the troop, who watches for the enemy, who opens the march, who advances courageously upon the adversary that threatens his family, while the female climbs the trees." It would be strange if a few such cases did not exist where the very survival of the species depends upon the development of this instinct, but, as a matter of fact, they are rare even among the higher types. In the great majority of cases the female, in addition to her maternal sacrifices, not only provides for the nourishment of herself and offspring but also fights in their defence, while the male remains passive except when he is fighting his rivals for her attentions. I doubt the statement respecting the lion, for lion hunters learn by experience that the male is little to be feared, and even assert that he is a coward, while they equally learn to beware of the lioness, especially when her whelps are with her. Even Tartarin de Tarascon had learned this before he started on his *grande chasse*, and his only dread was lest he should encounter *la femelle*. It is the same with bears and most wild beasts. The males direct their prowess and confine their exertions chiefly to fighting off rival males of their own species, which contributes nothing to the support or protection of the "family." The barn-yard cock is often seen to call the hens to a store of food, but these chivalrous attentions, like many human ones, are only paid to those that are least in need of them, and always have reference to a *quid pro quo*. He is never found following the old mother with her brood. She must scratch for herself and her chickens too. Many ungulates are highly polygamous owing to the fierce warfare of the males for

the possession of the females. "In our own country," says Dr. C. Hart Merriam in an unpublished report, "the elk and the buffalo are notorious examples of polygamous animals, single bulls possessing large harems which they defend with most jealous vigilance at the cost of many bloody battles." It is also well known that among the latter of these animals at least there are to be found separate herds or groups of vanquished "bachelor" bulls that are not allowed to remain with the cows. This is certainly a poor way for the males to care for the females. One of the charges against polygamy among human beings is that it necessarily forces the women to perform excessive labor and drudgery, and if animals are capable of doing anything for one another it must be the same with them. A still more extreme case is that of the fur seals. "The male," says Krascheninikow,\* "has from eight to fifteen, and even sometimes fifty females, whom he guards with such jealousy that he does not allow any other to come near his mistresses: and though many thousands of them lie upon the same shore, yet every family keeps apart; that is, the male with his wives, young ones, and those of a year old, which have not yet attached themselves to any male; so that sometimes the family consists of one hundred and twenty." This statement made a century and more ago has been abundantly confirmed by later observations as recorded in Dr. Allen's work and still more fully by Dr. Merriam, who, as Bering Sea Commissioner, has recently enjoyed exceptional opportunities for studying the habits of these animals. Here also the bachelors, or "holluschukies" live apart, sometimes occupying separate islands.†

Any required number of facts might be adduced to show that nature makes scarcely any provision for the care and sustenance of the female and young even of the higher animals, and that male superiority here is simply the result of sexual selection, by which those qualities are developed in the male sex which are most admired by the females, among which, as to so large an extent in the human

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\* Quoted by Dr. J. A. Allen in his *History of North American Pinnipeds*, Washington, 1880, p. 341-342.

† Report of Dr. C. Hart Merriam in the Fur-Seal Arbitration Case of the United States, 1892.

race, what may be called moral qualities, those that would most benefit the species, play an exceedingly restricted rôle.

Ferrero's examples among the lower, invertebrate types are unfortunate for his position. In bees and the like the male is literally a "drone" and devotes his brief existence wholly to the *Minnedienst*; and while in other insects that he enumerates the female psyche has a sufficiently brief career, that of the male is still further curtailed, many male insects taking no nourishment at all and even lacking the organs for this purpose. It is a strained argument to attempt to show that this brevity of the imago state in insects is due to a lack of division of labor between the sexes. It proves a great deal too much, since many fishes are equally without provision of sexual co-operation, and yet they have somewhat extended lives. But most insects pass the greater part of their lives in the larval state which is often much prolonged as, for example, in the seventeen-year locust or cicada. Weismann has offered the only satisfactory explanation of the apparent anomalies in the duration of life in animals, and Ferrero would do well to consider this more carefully than he seems to have done. All the facts that he advances, while they have no bearing on the theory he is defending, go to support the law of normal female supremacy in nature as it prevails in the lower types and the subsequent reversal of that law by the stronger one of sexual selection operating in the higher types in which the psychic element has gained prominence.

On Ferrero's theory the bad treatment of women by savages constitutes an anomaly in the general course of development. If the higher male animals all worked for their females and offspring, supplying them with food and shelter and defending them from their enemies, while the females did nothing but bear and suckle their young, there certainly would be a marked contrast between their case and that of the savages, among whom, in most cases, it is the women who do all the drudgery work and in many cases supply the tribe with most of the necessities of life, while the men fight one another and other tribes, or hunt as much for pleasure as for meat, or lounge around the camp eating the food prepared by the women whom they do not allow to eat with them. But, properly viewed,

there is no anomaly in savage life. Among animals there is very little *provision* in the proper sense. Many, it is true, have acquired through natural selection the instinct of storing food, which is usually done by both sexes. Indeed, the most remarkable cases of this are among insects such as bees, where a specialised race of "workers" has been developed. Still more remarkable and opposed to Fererro's theory, these workers are females that have lost their reproductive powers, though, as pointed out by Herbert Spencer in his last rejoinder to Weismann,\* there are not only intermediate forms to some extent even now, but as this condition has been the result of slow development, there must have once been all possible gradations. That is to say, queens are transformed into neuters, and it is the females that do the work. In the higher forms, as I have shown, in so far as there is work to do, the females do their full share, usually much more than their share. The transition from the animal to the savage state in this respect is very slight, and the savage only represents a prolongation of the animal state. The anomaly is not here. It is located farther back. The whole upper part of the animal series may be regarded as anomalous, and the anomaly is a radical one, since it represents a change from normal female superiority to abnormal male superiority, a change brought about by the females themselves through sexual selection, whereby they have surrendered their sceptre and bartered their empire for an æsthetic gratification. To some this may seem a degeneracy, but few would wish wholly to restore the Amazonian *régime*.

The effort of a fully self-conscious intelligence as it exists in the most enlightened types of mankind is to preserve all that is best in woman, to heighten to the utmost that æsthetic attribute through which she has ennobled man and made him what he is. It is no longer woman who selects. From the earliest historic period at least man too has been exercising choice, and female beauty as it now expresses itself in woman is the result. But the progress of civilisation has wrought a change in the æsthetic tastes of mankind, and while physical beauty has lost none of its charm, moral and in-

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\* *Contemporary Review* for January, 1894.

tellectual beauty have come to hold the first place, and true companionship can only be found in the harmonious union of these three. Such a combination in woman can only be secured through a life of interested activity which unites the exercise of all the faculties with the acquirement of both knowledge and the good things of this world. Agreeable productive labor is the highest and only true source of happiness and worth, whether for man or woman.

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## NOTION AND DEFINITION OF NUMBER.

MANY essays have been written on the definition of number. But most of them contain too many technical expressions, philosophical and mathematical, to meet the taste of the non-mathematician. The clearest idea of what counting and numbers mean may be gained from the observation of children and of nations in the childhood of civilisation. When children count or add, they use either their fingers, or small sticks of wood, or pebbles, or similar things, which they separately adjoin to the things to be counted or otherwise ordinally associate with them. As we know from history, the Romans and Greeks employed their fingers when they counted or added. And even to-day we frequently meet with people to whom the use of the fingers is absolutely indispensable for computation.

Still better proof that the accurate association of such "other" things with the things to be counted is the essential element of numeration are the tales of travellers in Africa, telling us how African tribes sometimes inform friendly nations of the number of the enemies who have invaded their domain. The conveyance of the information is effected not by messengers, but simply by placing at spots selected for the purpose a number of stones exactly equal to the number of the invaders. No one will deny that the number of the tribe's foes is thus communicated, even though no name exists for this number in the languages of the tribes. The reason why the fingers are so universally employed as a means of numeration is, that every one possesses a definite number of fingers, sufficiently large for purposes of computation and that they are always at hand.

Besides this first and chief element of numeration which, as we

have seen, is the exact, individual conjunction or association of other things with the things to be counted, is to be mentioned a second important element, which in some respects perhaps is not so absolutely essential, namely, that the things to be counted shall be regarded as of the same kind ; thus, any one who subjects apples and nuts collectively to a process of numeration will regard them for the time being as objects of the same kind, perhaps, by subsuming them under the common notion of fruit. We may therefore lay down provisionally the following as a definition of counting : to count a group of things is to regard the things as the same in kind and to associate ordinally, accurately, and singly with them other things. In writing, we associate with the things to be counted simple signs, like points, strokes, or circles. The form of the symbols we use is indifferent. Neither need they be uniform. It is also indifferent what the spatial relations or dispositions of these symbols are. Although, of course, it is much more convenient and simpler to fashion symbols growing out of operations of counting on principles of uniformity and to place them spatially near each other. In this manner are produced what I have called\* natural number-pictures ; for example,

etc.

Now-a-days such natural number-pictures are rarely employed, and are to be seen only on dominoes, dice, and sometimes, also, on playing-cards.

It can be shown by archaeological evidence that originally numeral writing was made up wholly of natural number-pictures. For example, the Romans in early times represented all numbers, which were written at all, by assemblages of strokes. We have remnants of this writing in the first three numerals of the modern Roman system. If we needed additional evidence that the Romans originally employed natural number-signs, we might cite the passage in Livy VII, 3, where we are told, that, in accordance with a very ancient law, a nail was annually driven into a certain spot in the sanctuary of

\* *System der Arithmetik.* (Potsdam: Aug. Stein. 1885.)

Minerva, the "inventrix" of counting, for the purpose of showing the number of years which had elapsed since the building of the edifice. We learn from the same source that also in the temple at Volsinii nails were shown which the Etruscans had placed there as marks for the number of years.

Also recent researches in the civilisation of ancient Mexico show that natural number-pictures were the first stage of numeral notation. Whosoever has carefully studied in any large ethnographical collection the monuments of ancient Mexico, will surely have remarked that the nations which inhabited Mexico before its conquest by the Spaniards, possessed natural number-signs for all numbers from one to nineteen, which they formed by combinations of circles. If in our studies of the past of modern civilised peoples, we meet with natural number-pictures only among the Greeks or Romans, and some Oriental nations, the reason is that the other nations, as the Germans, before they came into contact with the Romans and adopted the more highly developed notation of the latter, were not yet sufficiently advanced in civilisation to feel any need of expressing numbers symbolically. But since the most perfect of all systems of numeration, the Hindu system of "local value," was introduced and adopted in Europe in the twelfth century, the Roman numeral system gradually disappeared, at least from practical computation, and at present we are only reminded by the Roman characters of inscriptions of the first and primitive stage of all numeral notation. To-day we see natural number-pictures, except in the above-mentioned games, only very rarely, as where the tally-men of wharves or warehouses make single strokes with a pencil or a piece of chalk, one for each bale or sack which is counted.

As in writing it is of consequence to associate with each of the things to be counted some simple sign, so in speaking it is of consequence to utter for each single thing counted some short sound. It is quite indifferent here what this sound is called, also, whether the sounds which are associated with the things to be counted are the same in kind or not, and finally, whether they are uttered at equal or unequal intervals of time. Yet it is more convenient and simpler to employ the same sound and to observe equal intervals in

their utterance. We arrive thus at natural number-words. For example, utterances like,

oh, oh-oh, oh-oh-oh, oh-oh-oh-oh, oh-oh-oh-oh-oh,  
are natural number-words for the numbers from one to five. Number-words of this description are not now to be found in any known language. And yet we hear such natural number-words constantly, every day and night of our lives; the only difference being that the speakers are not human beings but machines—namely, the striking-apparatus of our clocks.

Word-forms of the kind described are too inconvenient, however, for use in language, not only for the speaker, on account of their ultimate length, but also for the hearer, who must be constantly on the *qui vive* lest he misunderstand a numeral word so formed. It has thus come about that the languages of men from time immemorial have possessed numeral words which exhibit no trace of the original idea of single association. But if we should always select for every new numeral word some new and special verbal root, we should find ourselves in possession of an inordinately large number of roots, and too severely tax our powers of memory. Accordingly, the languages of both civilised and uncivilised peoples always construct their words for larger numbers from words for smaller numbers. What number we shall begin with in the formation of compound numeral words is quite indifferent, so far as the idea of number itself is concerned. Yet we find, nevertheless, in nearly all languages one and the same number taken as the first station in the formation of compound numeral words, and this number is ten. Chinese and Latins, Fins and Malays, that is, peoples who have no linguistic relationship, all exhibit in the formation of numeral words the similarity of beginning with the number ten the formation of compound numerals. No other reason can be found for this striking agreement than the fact that all the forefathers of these nations possessed ten fingers.

Granting it were impossible to prove in any other way that people originally used their fingers in reckoning, the conclusion could be inferred with sufficient certainty solely from this agreement with regard to the first resting-point in the formation of compound

numerals among the most various races. In the Indo-Germanic tongues the numeral words from ten to ninety-nine are formed by composition from smaller numeral words. Two methods remain for continuing the formation of the numerals: either we take a new root as our basis of composition (hundred) or we go on counting from ninety-nine, saying tenty, eleventy, etc. If we were logically to follow out this second method we should get tenty-ty for a thousand, tenty-ty-ty for ten thousand, etc. But in the utterance of such words, the syllable *ty* would be so frequently repeated that the same inconvenience would be produced as above in our individual number-pictures. For this reason the genius which controls the formation of speech took the first course.

But this course is only logically carried out in the old Indian numeral words. In Sanskrit we not only have for ten, hundred, and thousand a new root, but new bases of composition also exist for ten thousand, one hundred thousand, ten millions, etc., which are in no wise related with the words for smaller numbers. Such roots exist among the Hindus for all numerals up to the number expressed by a one and fifty-four appended naughts. In no other language do we find this principle carried so far. In most languages the numeral words for the number consisting of a one with four and five appended naughts are compounded, and in further formations use is made of the words million, billion, trillion, etc., which really exhibit only one root, before which numeral words of the Latin tongue are placed.

Besides numeral word-systems based on the number *ten*, logical systems are only found based on the number five and on the number twenty. Systems of numeral words which have the basis five occur in equatorial Africa. (See the language-tables of Stanley's books on Africa.) The Aztecs and Mayas of ancient Mexico had the base twenty. In Europe it was mainly the Celts who reckoned with twenty as base. The French language still shows some few traces of the Celtic vicenary system, as in its word for eighty, *quatre-vingt*. The choice of five and twenty as bases is explained simply enough by the fact that each hand has five fingers, and that hands and feet together have twenty fingers and toes.

As we see, the languages of humanity now no longer possess natural number-signs and number-words, but employ names and systems of notation adopted subsequently to this first stage. Accordingly, we must add to the definition of counting above given a third factor or element which, though not absolutely necessary, is yet important, namely, that we must be able to express the results of the above-defined associating of certain other things with the things to be counted, by some conventional sign or numeral word.

Having thus established what counting or *numbering* means, we are in a position to define also the notion of *number*, which we do by simply saying that by number we understand *the results of counting or numeration*, which are naturally composed of two elements. First, of the ordinary number-word or number-sign; and secondly, of the word standing for the specific things counted. For example, eight men, seven trees, five cities. When, now, we have counted one group of things, and subsequently also counted another group of things of the same kind, and thereupon we conceive the two groups of things combined into a single group, we can save ourselves the labor of counting the things a third time by blending the number-pictures belonging to the two groups into a single number-picture belonging to the whole. In this way we arrive on the one hand at the idea of addition, and on the other, at the notion of "unnamed" number. Since we have no means of telling from the two original number-pictures and the third one which is produced from these, the kind or character of the things counted, we are ultimately led in our conception of number to abstract wholly from the nature of the things counted, and to form the definition of unnamed number.

We thus see that to ascend from the notion of named number to the notion of unnamed number, the notion of addition is necessary, joined to a high power of abstraction. Here again our theory is best verified by observations of children learning to count and add. A child, in beginning arithmetic, can well understand what five pens or five chairs are, but he cannot be made to understand from this alone what five abstractly is. But if we put beside the first five pens three other pens, or beside the five chairs three other

chairs, we can usually bring the child to see that five things plus three things are always eight things, no matter of what nature the things are, and that accordingly we need not always specify in counting what kind of things we mean. At first we always make the answer to our question of what five plus three is, easy for the child, by relieving him of the process of abstraction, which is necessary to ascend from the named to the unnamed number, an end which we accomplish by not asking first what five plus three is, but by associating with the numbers words designating things within the sphere of the child's experience, for example, by asking how many five pens plus three pens are.

The preceding reflexions have led us to the notion of unnamed or abstract numbers. The arithmetician calls these numbers positive whole numbers, or positive integers, as he knows of other kinds of numbers, for example, negative numbers, irrational numbers, etc. Still, observation of the world of actual facts, as revealed to us by our senses, can naturally lead us only to positive whole numbers, such only, and no others, being results of actual counting. All other kinds of numbers are nothing but artificial inventions of mathematicians created for the purpose of giving to the chief tool of the mathematician, namely, arithmetical notation, a more convenient and more practical form, so that the solution of the problems which arise in mathematics may be simplified. All numbers, excepting the results of counting above defined, are and remain mere symbols, which, although they are of incalculable value in mathematics, and, therefore, can scarcely be dispensed with, yet could, if it were a question of principle, be avoided. Kronecker has shown that any problem in which positive whole numbers are given, and only such are sought, always admits of solution without the help of other kinds of numbers, although the employment of the latter wonderfully simplifies the solution.

How these derived species of numbers, by the logical application of a single principle, naturally flow from the notion of number and of addition above deduced, I shall show in a subsequent article entitled "Monism in Arithmetic."

HAMBURG.

HERMANN SCHUBERT.

## ETHICS AND THE COSMIC ORDER.

### A CRITICISM OF PROFESSOR THOMAS H. HUXLEY'S POSITION.

EVER since the doctrine of evolution has been accepted by the thinkers of mankind, the people have shown an extraordinary interest in its ethical and religious corollaries. And who can blame them? For in fact these apparently side issues are after all the main problems, in comparison with which all other inferences and applications sink into insignificance. No wonder that people listen with bated breath when a man of science who is thoroughly familiar with all the results of modern investigations, in their relative certainty and uncertainty, frankly sets forth his views of man's relation to the cosmos. Mankind is yearning for truth, for we need truth. Truth is the daily bread of our spiritual life, and if the sciences are what they pretend to be, if they present to us, each in its own domain, exact statements of truth, religion cannot unheedingly pass them by.

Prof. Thomas H. Huxley's lecture on "Evolution and Ethics," (London: Macmillan & Co., 1893,) appears to be the most important publication of this kind made of late. The view of the great scientist on ethics would have produced a sensation, if he had not prepared the public for its reception by former occasional utterances. His standpoint is radical in the extreme. A Schopenhauer *redivivus*, he denounces in most vigorous terms the world as a whole, and scorns theodicies not less than cosmogicies of all kinds. He boldly declares "that cosmic nature is no school of virtue, but the headquarters of the enemy of ethical nature," and is firmly convinced by the logic of facts "that the cosmos works through the lower nature

of man, not for righteousness, but against it." Ethics has no home here on earth, for according to his drastic comparison, it is like Jack's ascent into fairy-land on the bean-stalk ; he says :

" The hero of our story descended the bean-stalk, and came back to the common world, where fare and work were alike hard ; where ugly competitors were much commoner than beautiful princesses ; and where the everlasting battle with self was much less sure to be crowned with victory than a turn-to with a giant. We have done the like. Thousands upon thousands of our fellows, thousands of years ago, have preceded us in finding themselves face to face with the same dread problem of evil. They also have seen that the cosmic process is evolution ; that it is full of wonder, full of beauty, and, at the same time, full of pain. They have sought to discover the bearing of these great facts on ethics ; to find out whether there is, or is not, a sanction for morality in the ways of the cosmos."

Professor Huxley leaves no doubt as to his reply to this problem. He sums up the case, saying :

" Thus, brought before the tribunal of ethics, the cosmos might well seem to stand condemned. . . . But few, or none, ventured to record that verdict."

With special severity the great scientist criticises " the fallacies " which pervade the so-called " ethics of evolution." He says :

" As the immoral sentiments have no less been evolved, there is, so far, as much natural sanction for the one as the other. The thief and the murderer follow nature just as much as the philanthropist. Cosmic evolution may teach us how the good and the evil tendencies of man may have come about ; but, in itself, it is incompetent to furnish any better reason why what we call good is preferable to what we call evil than we had before."

Concerning the fallacy which identifies " the fittest " and " the best " he says :

" I suspect that this fallacy has arisen out of the unfortunate ambiguity of the phrase 'survival of the fittest.' 'Fittest' has a connotation of 'best' ; and about 'best' there hangs a moral flavor. In cosmic nature, however, what is 'fittest' depends upon the conditions. Long since, I ventured to point out that if our hemisphere were to cool again, the survival of the fittest might bring about, in the vegetable kingdom, a population of more and more stunted and humbler and humbler organisms, until the 'fittest' that survived might be nothing but lichens, diatoms, and such microscopic organisms as those which give red snow its color ; while, if it became hotter, the pleasant valleys of the Thames and Isis might be uninhabitable by any animated beings save those that flourish in a tropical jungle. They, as the fittest, the best adapted to the changed conditions, would survive."

Professor Huxley goes farther still in his denial of any ethical element in the order of nature. He says :

" For his successful progress, as far as the savage state, man has been largely indebted to those qualities which he shares with the ape and the tiger ; his exceptional physical organisation ; his cunning, his sociability, his curiosity, and his imitativeness ; his ruthless and ferocious destructiveness, when his anger is roused by opposition.

" But . . . these deeply ingrained serviceable qualities have become defects. Civilised man would gladly kick down the ladder by which he has climbed. . . . In fact, civilised man brands all these ape and tiger promptings with the name of sins ; he punishes many of the acts which flow from them as crimes ; and, in extreme cases, he does his best to put an end to the survival of the fittest of former days by axe and rope.

" The science of ethics professes to furnish us with a reasoned rule of life ; to tell us what is right action and why it is so. Whatever difference of opinion may exist among experts, there is a general consensus that the ape and tiger methods of the struggle for existence are not reconcilable with sound ethical principles."

A great part of Professor Huxley's lecture is filled with an appreciative account of Buddha's doctrines. " It is a remarkable indication of the subtlety of Indian speculation," he says, " that Gautama should have seen deeper than the greatest of modern idealists. . . . Gautama proceeded to eliminate substance altogether ; and to reduce the cosmos to a mere flow of sensations, emotions, volitions, and thoughts, devoid of any substratum." But the salient point is, " to the early philosophers of Hindostan, no less than to those of Ionia, it was plain that suffering is the badge of all the tribe of sentient beings " ; and suffering " is no accidental accompaniment, but an essential constituent of the cosmic process." Professor Huxley sketches the philosophical evolution of India and Greece as follows :

" In Hindostan, as in Ionia, a period of relatively high and tolerably stable civilisation had succeeded long ages of semi-barbarism and struggle. Out of wealth and security had come leisure and refinement, and, close at their heels, had followed the malady of thought."

Quietism, we are told, was the final outcome of Indian and of Græco-Roman thought ; for, says Professor Huxley, the Apatheia of Stoic philosophy and the Nirvâna of Buddhism are very similar.

"The Vedas and the Homeric epos set before us a world of rich and vigorous life. . . . A few centuries pass away and, under the influence of civilisation, the descendants of these men are 'sicklied o'er with the pale cast of thought'—frank pessimists, or at best, make-believe optimists. The courage of the warlike stock may be as hardly tried as before, perhaps more hardly, but the enemy is self. The hero has become a monk. The man of action is replaced by the quietist, whose highest aspiration is to be the passive instrument of the divine Reason. By the Tiber, as by the Ganges, ethical man admits that the cosmos is too strong for him; and, destroying every bond which ties him to it by ascetic discipline, he seeks salvation in absolute renunciation."

This view of life apparently leaves us in utter desolation; but Professor Huxley is not quite so pessimistic as he appears in these quotations. He does not recommend quietism, but proposes that we should fight the cosmos:

"Let us understand, once for all, that the ethical progress of society depends, not on imitating the cosmic process, still less in running away from it, but in combating it."

The risk of combating the cosmic process is great, but Professor Huxley relies on man's intelligence. He continues:

"It may seem an audacious proposal thus to pit the microcosm against the macrocosm and to set man to subdue nature to his higher ends; but, I venture to think that the great intellectual difference between the ancient times with which we have been occupied and our day, lies in the solid foundation we have acquired for the hope that such an enterprise may meet with a certain measure of success.

"The history of civilisation details the steps by which men have succeeded in building up an artificial world within the cosmos."

Accordingly, in Professor Huxley's mind, artificiality built upon intelligence, is the saving power! All his denunciations of "the injustice of the nature of things, of the unethical character of the cosmic order, and of the moral indifference of the selective factors of evolution" serve simply as a foil to this idea. But Professor Huxley does not appear to see, that there is no choice left us. If our rules of conduct do not ultimately rest upon the order of nature, they must be of supernatural origin. That kind of art, of intelligence, and of theory, which is artificial in the sense that it neither grows out of nature nor remains in agreement with the laws of nature, but combats the cosmic order, is nothing but a dream, an impossibility; and thus

the final outcome of the whole lecture would be highly disappointing, if the five concluding paragraphs did not contain a few sentences which stand in striking contrast to the rest. Considering the fact that "the organised and highly developed sciences and arts of the present day have endowed man with a command over the course of non-human nature greater than that attributed to the magicians," Professor Huxley sees "no limit to the extent to which intelligence and will, guided by sound principles of investigation, and organised in common effort, may modify the conditions of existence, for a period longer than that now covered by history." But he adds :

"I deem it an essential condition of the realisation of that hope that we should cast aside the notion that the escape from pain and sorrow is the proper object of life."

If escape from pain and sorrow is not the proper object of life, Professor Huxley need not be so impatient at the existence of pain and suffering. Intelligence and will, he says, must be "guided by sound principles of investigation"; but what are "sound principles of investigation" if not those by which we succeed in solving the problems of existence ; sound are such principles only as are endorsed by the cosmos. Trust in science is incompatible with denunciations of the cosmic order. To show the full significance of this idea we shall now review Professor Huxley's propositions and call attention to what we consider the defects of his argument.

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We miss in Professor Huxley's writings any definite and clear meaning of the term ethics. Ethics is the science of moral conduct. But what do we mean by "moral goodness." Will Professor Huxley be satisfied to accept without criticism the traditional meaning of morality? Is he good who keeps the ten Mosaic commandments, or he who loves his enemies and resists not evil? Must we consider as moral the Christian injunction to turn the left cheek to him who smites us on our right cheek? Or must we regard him as good who follows the Homeric principle of excelling all others?\* Shall we adopt the hedonistic view and define good as that which produces

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\* *aiēν ἀριστεῖν καὶ ἵπέρμενον ἔμεναι ἄλλων.*

the greatest amount of pleasurable feelings? Who shall decide whether your conception of good and evil, or mine, or that of the Christian, or that of the Greek, or that of the Buddhist, or that of the Confucian is to be regarded as the standard?

Judging from one passage of the present lecture, Professor Huxley may have adopted the intuitionist view, which claims that good cannot be defined and that in our judgment of it we must rely upon our intuition.\* Intuitionism, however, will render ethics, as a science, impossible, and relegate it to the realm of unsettled opinions. The proposition that all intuitions are equally justified, each one in its own subjective sphere, practically amounts to a most radical denial of ethics, as much so as agnosticism, when declaring that the fundamental problems of philosophy are insolvable, is tantamount to a denial of philosophy as a science.

Is there any other criterion than experience, and what is the test of experience but an appeal to the cosmic order of nature? Indeed, we have no choice left us, but must investigate all the different ethical systems to determine which one is the strongest, which one will produce the type of mankind that is fittest to survive; which one is best adapted to the cosmic order of the world.

The cosmos and the constitution of the cosmos must after all furnish us the necessary data from which we have to construct our criterion of ethics. Ethics is not a Jack's ascent to fairy-land on a bean-stalk, but a systematic presentation of the rules of conduct for practical life. Professor Huxley rightly urges that the survival of the fittest among plants depends upon surrounding conditions; under unfavorable conditions, such as prevail in the arctic zones and on the Alpine ridges, mosses and lichens only will survive, while the Sahara is uninhabitable for civilised mankind. In the same way we urge that in the survival of the fittest in society and also in the survival of the fittest among the different systems of society, those will survive that adapt themselves most closely to the conditions which

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\*He says: "Some day, I doubt not, we shall arrive at an understanding of the evolution of the aesthetic faculty; but all the understanding in the world will neither increase nor diminish the force of the intuition that this is beautiful and that is ugly."

social life necessarily exhibits according to the constitution of the cosmos.\*

Professor Huxley says that "man has been largely indebted for his successful progress to those qualities which he shares with the ape and tiger . . . and he now kicks down the ladder by which he has climbed." This is a misstatement of the case. If by "those qualities" Professor Huxley means, as he explicitly says, "those ape and tiger promptings" which "civilised man brands with the name of sins," he is obviously mistaken. If that were so, why have neither the tiger nor the ape attained to the power of man? We cannot consider the rise of man's power a mere accident, for it is plain enough that ape and tiger have failed to adapt themselves to the conditions of a higher life, while man has climbed the ladder, because of his rational insight, which reveals to him a truer knowledge of things and enables him to adapt his methods more perfectly to the cosmic order of existence. However, if Professor Huxley means those nobler qualities of ape and tiger which these animals share with man, viz., sociability, imitativeness, or a talent of adaptation to circumstances in the ape, and indomitable energy in the tiger, we should say that civilised man has no reason "to kick down the ladder by which he has climbed." On the contrary, the stronger these qualities are in him, the more rapidly will he advance in the future.

Says Professor Huxley :

"Social progress means a checking of the cosmic process at every step and the substitution for it of another, which may be called the ethical process ; the end of which is not the survival of those who may happen to be the fittest, in respect of the whole of the conditions which exist, but of those who are ethically the best."

We say : Social progress becomes possible *only* through a more comprehensive and deeper understanding of the cosmic order of the world, and it consists in a more and more perfect adaptation to the

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\* That "the best" societies are in the long run "the fittest to survive," does not exclude the fact that what in social life appears as a "defect" is often actually favorable for the preservation of animals and plants and also of single individuals. The terms "best" and "fittest to survive" must therefore not be regarded as identical. As it would lead us too far here to discuss the problem in detail, we refer the reader to the articles, "The Test of Progress" and "The Ethics of Evolution," in *Homilies of Science*, pp. 36-47.

ethical rules derived from our better insight into the laws of our being.

While speaking disparagingly of theodicies, Professor Huxley says they are, so far as he knows, "all variations of the theme set forth in those famous six lines of Pope," which end with the words :

"And spite of pride, in erring reason's spite,  
One truth is clear : whatever is, is right."

Professor Huxley justly criticises this sentiment which stifles every aspiration and paralyses every effort, saying: "Why try to set right what is right already? Why strive to improve the best of all possible worlds? Let us eat and drink, for as to-day all is right, so to-morrow all will be."

Here we would suggest to Professor Huxley that he make a distinction between the facts of nature and the cosmic constitution of the world. The world as it now surrounds us, the present state of things is such as it is in consequence of innumerable events, which, according to the law of cause and effect, have produced us and our surrounding conditions. One of the most obtrusive features of existence is that the present state of things and the conditions which surround us are always imperfect. There is always room for improvement; the path of progress is infinite, and whatever is, is always somehow faulty. The cosmic order of the world, however, is immutable and above all attempts at improvement. The constitution of the universe consists in those features of reality which the scientist describes in what we commonly call the laws of nature. It is, for instance, a constitutional feature of the universe that lies have injurious effects upon those who accept them as truths, and also upon those who promulgate them, as soon as they are found out. We call such consequences of evil deeds their curses. Now, we should say that such evil conditions as are the consequences of sin, are in themselves evils, but the law, that makes curses the wages of sin, is no evil.

We do not intend to write either a Theodicy or a Cosmodicy, because neither God nor the cosmos needs it; they justify themselves. Just as much as they are above all criticism, they need no defence from the poor pen of a mortal scribbler. There is no use

either for an indictment of the cosmic order, or for a condemnation of it, or for a justification of it, since we can neither convict it, nor punish it, nor educate it to our peculiar views of moral goodness.

All indictments of the cosmic order, such as those made by John Stuart Mill and Professor Huxley, are mere misstatements of the case. That the world is full of misery cannot be denied ; it is also true that the evil-doer involves in the curse of his sin a great number of other persons, and that pain and suffering are necessary accompaniments and essential constituents of life ; but those, who like Mill, solemnly arraign nature for "deliberate" murder because every living being that is born must die, and those who like Huxley, when speaking of pleasures and pains, make the objection that "it is admittedly impossible for the lower orders of sentient beings to deserve (sic !) either the one or the other," are guilty of anthropomorphism.

We may speak of "the unfathomable injustice of the nature of things" only when we look upon the world as a whole, as a personal being, and upon every single man as an individual soul-entity, who, from some unknown sphere is, like Hamlet, "a no less blameless dreamer, dragged, in spite of himself, into a world out of joint."\* This view adopts the old, mythological theory, which individualises God and man, yet drops at the same time those other allegorical notions of immortality and a transcendental heaven above the world which are its indispensable complements. It is natural that when we remain with one foot in the old domain of thought and simply lift the other without yet stepping into the next higher sphere of progress, we have assumed no firm position. He who takes such an attitude should not, because of the inconsistency of his own position, blame the world. If a man looks through spectacles which contain lenses of greatly different strength, he must not complain that things are out of shape, but must seek the fault in the medium through which he looks at his surroundings.†

\* These are Huxley's own words, *Evolution and Ethics*, p. 13.

† John Stuart Mill's denunciation of Nature which anticipates some of the most vigorous expressions of Professor Huxley, is found in his essay on Nature. For a criticism of Mill's position see the writer's article "Nature and Morality" (*The Open Court*, Nos. 239, 241, and 242).

The attitude of both Mr. Mill and Professor Huxley is the more singular as both must be perfectly conscious of the erroneousness of their position. Professor Huxley indeed recognises the fact that, "strictly speaking, social life and the ethical process are part and parcel of the general process of evolution"; but this statement appears only in a forlorn passage among the notes of his appendix. He makes no use of it and bases the main propositions of his lecture upon statements that are only loosely speaking correct.

Professor Huxley might have found a cosmodyicy in the Buddhist doctrine of Karma which he admirably epitomises as follows :

"Everyday experience familiarises us with the facts which are grouped under the name of heredity. Every one of us bears upon him obvious marks of his parentage, perhaps of remoter relationships. More particularly, the sum of tendencies to act in a certain way, which we call 'character,' is often to be traced through a long series of progenitors and collaterals. So we may justly say that this 'Character'—this moral and intellectual essence of a man—does veritably pass over from one fleshly tabernacle to another and does really transmigrate from generation to generation. In the new-born infant, the character of the stock lies latent and the Ego is little more than a bundle of potentialities. But, very early, these become actualities; from childhood to age they manifest themselves in dullness or brightness, weakness or strength, viciousness or uprightness; and with each feature modified by confluence with another character, if by nothing else, the character passes on to its incarnation in new bodies.

"The Indian philosophers called character, as thus defined, 'karma.' It is this karma which passed from life to life and linked them in the chain of transmigrations; and they held that it is modified in each life, not merely by confluence of parentage, but by its own acts."

Professor Huxley adds in his notes :

"In the theory of evolution, the tendency of a germ to develop according to a certain specific type, e. g., of the kidney bean seed to grow into a plant having all the characters of *Phaseolus vulgaris* is its 'Karma.' It is the 'last inheritor and the last result' of all the conditions that have affected a line of ancestry which goes back for many millions of years to the time when life first appeared on the earth. . . . As Prof. Rhys Davids aptly says, the snowdrop 'is a snowdrop and not an oak, and just that kind of a snowdrop, because it is the outcome of the Karma of an endless series of past existences.' ('Hibbert Lectures,' p. 114.)"

If this Buddhistic view of Karma is correct, the present state of existence on earth is the exact product of the actions that have

taken place here upon our planet since its formation as an independent body in the solar system. The constitution of the universe is such that we reap as we have sown. When we say "we," it is understood that it means not our present individualised existence only, but our entire Karma, past, present, and future. It includes all the causes of our being ; even the bad company from whose vices we suffer are, in this sense, a part of our own making. Thus it becomes apparent that not God is guilty of the evil conditions of our state of being, but we ourselves ; we have not been "dragged into a world out of joint," but we ourselves are the creators, not only of our character, but also of the plight in which we are. There is no fault to be found with the constitutional order of being which punishes those who go astray ; we alone are the sinners, and if we expect delivery from evil, we must be our own saviours.

It appears to be Professor Huxley's opinion that Buddha and all those moral teachers whose final goal of moral conduct he characterises as quietism, have condemned the cosmos ; but this proposition is more plausible than correct. We think that Buddha's position was slightly different from what Professor Huxley represents it. Buddha taught a suppression of all sinful desires, of selfishness, covetousness, and lusts, but at the same time did not tire in his exhortations of rousing oneself from indifference to energetic activity, and of working out one's own salvation with diligence. Whatever Buddha may have taught, we should say that energetic work and intense activity is one of the most urgent demands which the constitution of the cosmos makes on all its children. And we trust that no great moral teacher, Buddha not excepted, was a quietist in the usual sense of the term.

Professor Huxley says (on page 33) :

" The practice of that which is ethically best—what we call goodness or virtue—involves a course of conduct which, in all respects, is opposed to that which leads to success in the cosmic struggle for existence. In place of ruthless self-assertion it demands self-restraint."

It is true enough, that goodness or virtue requires not "self-assertion," but "self-restraint"; or as Professor Huxley says on page 29, "the enemy is self." But it is not true that self-restraint

is "a course of conduct which in all respects is opposed to that which leads to success in the cosmic struggle for existence." Even tigers succeed in the struggle for existence only because their self-assertion is tempered with self-restraint; and man succeeds better than tigers and apes, in exactly the degree in which he is more perfectly familiar with the conditions that lead to success in that struggle. Man uses his knowledge with greater energy, not of muscle, but of mental concentration, and with more complete self-possession. Buddha's quietism (if I interpret his Dharma rightly) consists in the recognition of the truth that "self is the enemy," but while we must replace self-assertion by self-restraint, we must not sink into the indolence of quietism. On the contrary, all the energy which human tigers waste in the service of selfishness should be employed to promote those duties which the cosmic order prescribes.

If Professor Huxley had recognised the difference which obtains between the laws of nature and the temporary state of things, he would scarcely have filed his indictment against the cosmic order. The laws of nature are a constitutional feature of the universe; they are irrefragable, immutable, eternal, and admit of no exception. It makes no difference whether we praise the cosmic order or denounce it, whether we like it or dislike it. It is the voice of God; nay, it is God himself in all his omnipotence and sternness. It is the Jahveh who was, is, and will be. We may, with Professor Huxley, bring it before the tribunal of ethics and boldly declare that it stands condemned; but we cannot set up a rule of life against it. Nothing will stand that contradicts it, and no definition of moral goodness goes to the bottom of truth, unless it casts its anchor in this bed-rock of facts.

Professor Huxley believes in the efficacy of "intelligence and will guided by sound principles of investigation"; in a word, he believes in science. And here we find ourselves in perfect agreement with him. We only wish him to know that if he adopts this belief in science as a living faith applicable to practical life and uses it for the elaboration of an ethical system, it will, if consistently thought out in all its consequences, lead him to that world-conception which we call the Religion of Science.

Belief in science means that truth can be investigated, found, and clearly stated; and truth clearly stated reveals to us the rules of right conduct.

Are science, and truth, and also the higher life of civilisation, as it becomes possible by a better understanding of truth,—are they indeed artificial worlds within the cosmos; do they really stand in such contradictory opposition to the cosmic order of nature as Professor Huxley would fain make us believe? Is the animal nearer than man to nature, and is ploughing, as Mr. Mill states, an infringement upon the natural order of things? Certainly not. For what are the results of science, but a knowledge of the world? They furnish us with a revelation of the constitution of the universe! And what is truth but a perfect description of the facts of nature summed up in their essential and permanent features? Will Professor Huxley glorify science and condemn that reality which science reveals? Will he exalt truth and scorn the original whose copy and portrait truth is? Will he boast of man's intelligence and the scientist's "sound principles of investigation," while he laughs to scorn the order of the cosmos, which is the prototype of man's reason and the God in whose image rational beings have been created?

The epiphany of truth in science and the religious trust in the ethical worth of truth proves that God—not the personal God of supernaturalism, but the superpersonal God of a scientific conception, the life that beats in our hearts and quickens every atom of the universe—is a living power still. We confess that we have abandoned the old, narrow dogmatism of the traditional religions, which Professor Huxley has frequently taken occasion to criticise with caustic humor and severe ridicule. But our attitude differs from his in one respect: we reject the mythology of religion only, but not its essential meaning. The Religion of Science preserves all that is worth preserving. It preserves the holy zeal for the ideals of righteousness and justice; it cherishes a personal relation to the source of our being and the authority of moral conduct; it stimulates the fervid aspiration onward through toil, disappointments, and sacrifices to victory; through doubt and darkness to light; and through hours of tribulation and anxiety to a bright fulfilment of

our hopes. "He that sat upon the throne said: Behold I make all things new. And he said unto me, Write: for these words are true and faithful."

EDITOR.

## KARMA AND NIRVANA.

### ARE THE BUDDHIST DOCTRINES NIHILISTIC?

**B**UDDHISM is generally characterised as a religion without a belief in God and the human soul, without the hope of a future existence, pessimistic and desolate, looking upon life as an ocean of suffering, quietistic in ethics, and finding comfort only in the expectation of a final extinction in nothingness. Now, it is true that Buddhists, with the exception of some less important heretical sects, do not believe in a personal God ; but, while on the one hand, there are many faithful Christians who look upon the theistic dogma merely as the symbolical expression of a deeper truth, on the other hand, the Buddhists believe not only in the Sambhôga Kâya which is an equivalent of the Christian God-idea, but even in a trinity of Sambhôga Kâya, Nirmâna Kâya, and Dharma Kâya, bearing a close resemblance to the Christian conception of Father, Son, and Holy Ghost. Further, it is undeniable that Buddhists do not believe in the âtman or Self which is the Brâhman philosophers' definition of soul, but they do not deny the existence of mind and the continuance of man's spiritual existence after death. Men trained in Western modes of thought, however, are so accustomed to their own terminology that Eastern thinkers, when using expressions denying the allegoric terms of Christian thought, are suspected of negativism. Even Western thinkers who have ceased to be believers in Christianity fail to see the positive aspect of the Buddhist world-conception, and we are again and again confronted with the refrain : If Buddha's doctrine is not nihilism, it practically amounts to nihilism.

Benfey says in the preface to his translation of the "Pantscha Tantra":

"The very bloom of the intellectual life of India (whether it found expression in Brahmanical or Buddhist works) proceeded substantially from Buddhism, and is contemporaneous with the epoch in which Buddhism flourished;—that is to say, from the third century before Christ to the sixth century after Christ. Taking its stand upon that principle, said to have been proclaimed by Buddhism in its earliest years, 'that only *that* teaching of the Buddha's is true which contraveneth not sound reason,'\* the autonomy of man's Intellect was, we may fairly say, effectively acknowledged; the whole relation between the realms of the knowable and of the unknowable was subjected to its control; and notwithstanding that the actual reasoning powers, to which the ultimate appeal was thus given, were in fact then not altogether sound, yet the way was pointed out by which Reason could, under more favorable circumstances, begin to liberate itself from its failings. We are already learning to value, in the philosophical endeavors of Buddhism, the labors, sometimes indeed quaint, but aiming at thoroughness and worthy of the highest respect, of its severe earnestness in inquiry. From the prevailing tone of our work, and still more so from the probable Buddhist origin of those other Indian story-books which have hitherto become known to us, it is clear that, side by side with Buddhistic earnestness, the merry jests of light, and even frivolous poetry and conversation, preserved the cheerfulness of life."

This description does not show Buddhism in a gloomy light, and it is different from what people usually imagine it to be.

In spite of the innumerable exuberances of modern Buddhism, its power and possibilities are still great mainly because it enjoins on its devotees the free exercise of their reasoning powers. Among all religious men Buddhists more than others appear to be at the same time full of religious zeal and also open to conviction. We read in Charles D. B. Mill's book "Buddha and Buddhism," p. 76:

"The Regent of Lhassa declared perpetually to the Catholic missionaries Huc and Gabet, as they tell us, 'Your religion is like our own, the truths are the same; we differ only in the explanation [exposition]. Amid all that you have seen and heard in Tartary and Thibet you must have found much to condemn; but you are to remember that many errors and superstitions that you may have observed, have been introduced by ignorant Lamas, but are rejected by intelligent Buddhists.' 'He admitted between us and himself only two points where there was disagreement—the origin of the world and the transmigration of souls.' 'Let us examine them both

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\* Wassiliew, *Der Buddhismus*, etc., p. 68.

together,' said he to them again, 'with care and sincerity; if yours is the best, we will accept it; how could we refuse you? If, on the other hand, ours is best, I doubt not you will be alike reasonable, and follow that.'"

Now it is strange that in those two points which constitute the main differences between Buddhism and Christianity, viz. creation and the nature of the soul, modern science, represented exclusively by scientists educated in Christian schools and with a Christian tradition of two millenniums, will certainly side with Buddhism. There is scarcely any one among our scientists who would be willing to endorse a creation out of nothing, and among our prominent psychologists few only will be found who adhere to the dualistic soul-conception which assumes the existence of a psychic agent behind the facts of soul-life. Nevertheless our popular conception of a Creator-God and an ego-soul are so deeply rooted in the minds of our people that, as a rule, they still consider these two ideas as the indispensable foundations of all religion.

We intend here briefly to review the fundamental conceptions of Buddhism, and hope to prove that although its doctrines of the soul and of Nirvâna may to Western minds appear to be the equivalent of nihilism, they certainly are not nihilism if we take the trouble to look at them from the Buddhist standpoint. And far from being pessimistic in the Western sense of pessimism, the Buddhist possesses a cheerful disposition which in this world of tribulation lifts him above pain and suffering.

#### THE BUDDHIST CONCEPTION OF THE SOUL.

SOUL was identified by Brahmanical philosophers with the *âtman*, the self, the ego, or the ego-consciousness, viz., that something in man which says "I." This *âtman* was conceived as a metaphysical entity behind man's sensations, thoughts, and other activities. Not the eye sees, they said, but the seer in the eye; not the ear hears, but the hearer in the ear; not the tongue tastes, but the taster in the tongue; not the nose smells, but the smeller in the nose; not the mind thinks, but the thinker in the mind; not the feet walk and the hands act, but the actor in the hands and the feet. The mysterious being in man which says "I am this person, I possess eyes,

ears, nose, tongue, hands and feet, I see, hear, smell, taste, feel the contact of bodies, walk and act," is said to be the agent of man's activity. This "I" or the ego of the soul, the agent of man's activity, is called the *âtman* or self; and in so far as the existence of the *âtman* is denied by Buddha, Buddhism teaches that there is no soul.

When Buddhists speak of the soul, they mean the Brahmanical *âtman*. When they mean what we would call soul, they speak of mind; and Buddhism, far from denying the existence of mind, only replaces the dualistic conception of Brahmanical philosophy by a monistic soul-theory, which in the course of time naturally developed the doctrine that there is nothing but mind.

The phrase "there is nothing but mind," reminds us of Clifford's dictum: Everything that exists is mind-stuff; and it may be explained as follows: All outside things appear to us as matter moving in space; so we appear to other beings as matter moving in space; we appear to be body to our own and to other people's senses; but in ourselves we feel our existence as that which we call mind or soul. Body is that as which mind or soul appears. Our body consisting of the same material as the things of the surrounding world and having originated therefrom, we conclude that all the world consists of the same material. All that which appears to us as matter can, if it but assume the proper form, become such minds as we are; in a word: all existence is spiritual, or more exactly speaking, psychical.\*

The psychology of Buddhism is briefly laid down in the first verse of the *Dhammapada*:

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\* In a partial accommodation to the Buddhist usage of terms, who, as a rule, translate *âtman* with "soul" and that which we would call "soul," i. e., the totality of our thoughts, sensations, and aspirations with "mind," we speak here of "soul or mind." Otherwise, and according to a stricter usage of terms we propose to make a distinction. When speaking of "soul," we mean mainly the feeling or sentient element of man's existence; when of mind, we think mainly of the intellectual and rational features with which the various feelings are endowed. Thus it would have been more proper for Clifford to say "soul-stuff" instead of "mind-stuff"; and the Buddhist doctrine, "everything is mind," should be expressed in the sentence: "Every reality which appears to sentient beings as objective, is in itself subjective; we call it matter, but it is in itself potential feeling; it can become sentient, it is soul, or better, soul-stuff." For details of definitions see *Primer of Philosophy*.

"All that we are, is the result of what we have thought: it is founded on our thoughts, it is made up of our thoughts."

This shows that Buddhism does not deny the existence of the soul, if by soul is meant man's ideas, aspirations, and mental activities. Buddhists declare that man's soul is not an indissoluble unit, not a transcendental self, but a compound. His physical and spiritual being consists of *sangskâras*,\* i. e., of certain forms and formative faculties which, according to the law of Karma, preserve his existence in the whirl of constant changes. Oldenberg translates the word *sangskâra* by *Gestaltung*, and says in explanation of the term (p. 242, Engl. Transl.):

"We might translate *Saṃkhâra* directly by 'actions' if we understand this word in the wide sense in which it includes also, at the same time, the internal actions, the will and the wish."

It is the formative element which shapes our existence and destiny. Oldenberg continues :

"Buddhism teaches: 'My action is my possession, my action is my inheritance, my action is the womb which bears me, my action is the race to which I am akin, my action is my refuge.' (*Anguttara Nikâya, Pañcaka Nipâta*.) What appears to man to be his body is in truth 'the action of his past state which then assuming a form, realised through his endeavor, has become endowed with a tangible existence.'"

The Jewish-Christian world-conception represents us as the creatures of God. We are like vessels in the potter's hand; some of us are made for noble purposes, others as vessels of impurity. Buddhists look upon our character and fate as the result of our own doings in our present and innumerable past existences. In this sense the *Dhammapada*† says :

"By oneself the evil is done; by oneself one suffers.

By oneself evil is left undone; by oneself one is purified.

Purity and impurity belong to oneself, no one can purify another.

You yourself must make an effort. The Buddhas are only preachers.

The way was preached by me when I understood the removal of the thorns in the flesh."

\* The customary transcription of this term is "Sâṃskâra" in Sanskrit and "Saṅkhâra" in Pâli; the dots over the "m" and "n" indicate that they are to be pronounced as "ng" in English.

† *Sacred Books of the East*, Vol. X, pp. 46 and 67.

According to Buddhist doctrines, the souls of men continue to exist as they are impressed upon other generations by heredity and education. A man remains the same from yesterday until to-day, and from to-day until to-morrow, in so far as he consists of the same sâṅkâras ; his character remains the same, exactly as a light burning several hours remains the same light, although the flame is always fed by other particles of oil.\* The man of the same character as you, is the same as you, in somewhat the same sense as two triangles of equal angles and sides are congruent. This is tersely expressed in the saying *Tat twam asi*, "That art thou," which Schopenhauer makes the cornerstone of ethics, for this view of the soul, recognising oneself in others, removes all motives of selfishness.

There are two isolated passages in the Dhammapada which apparently are a contradiction of Buddha's doctrine of the illusion of self. We read in verse 160 : "Self is the lord of self. Who else could be the lord"; and in verse 323 : "A man who controls himself enters the untrdden land through his own self-controlled self." Prof. Max Müller, who is himself a champion of the âtman doctrine, makes the most of these passages, in proving that Buddha might have taught the existence of self. But his proposition is improbable in the face of so many other unequivocal statements. Moreover, the general meaning of the quoted sentences is unmistakable. There is no reference to the existence of a self in the sense of the Brahmanical âtman. The author of these passages—whether Buddha himself, or a Buddhist, or, what is not improbable, some thinker older than Buddha—simply means that "by self-control alone man can attain salvation," but we have no right to interpret the words in a sense which would antagonise one of the cardinal doctrines of Buddhism. We must bear in mind that Buddha does not deny the existence of the idea of self in man. He only denies the existence of a soul-substratum such as was assumed under the name of self by the most prominent philosophers of his time. Buddha does not deny that there is an ego-consciousness in the soul. He only rejects the assumption that our ego-consciousness is the doer of our acts,

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\* This simile is used in *The Questions of Milinda*.

and the thinker of our thoughts, or a kind of thing-in-itself behind our existence.

There are many words which are used in various applications, implying radically different or even contradictory meanings, and the word "self" is in this respect no exception. Generally speaking, self is that idea in a man's mind which represents the totality of his existence, his bodily form, his senses and their activities, his thoughts, his emotions, his likes and dislikes, his aspirations and hopes. Far from proposing to exterminate self in this sense, Buddha's religion preaches the elevation and sanctification of every one's self, so much so that Oldenberg characterises the ethics of Buddhism as self-culture and self-discipline ("sittliche Arbeit an sich selbst"), as expressed in verse 239 of the Dhammapada :

"Let a wise man blow off the impurities of his self as a smith blows off the impurities of silver, one by one, little by little, and from time to time."

When Buddhists speak of the illusion of self, denouncing the idea of self as the main cause of all evil, they mean that erroneous notion which not only hypostatises the idea of self into an independent being, but even makes of it the metaphysical agent of all our activities. The adoption of this metaphysical self-conception is said to warp all our thoughts and to dim our spiritual vision ; it makes us neglect the true substance of our soul for a mere shadow.

Buddha, while denying the Brahmanical theory of the *âtman*, offered a new solution of the problem of the soul. Says Rhys Davids in his " Hibbert Lectures," p. 29 :

"The distinguishing characteristic of Buddhism was that it started a new line, that it looked upon the deepest questions men have to solve from an entirely different standpoint. It swept away from the field of its vision the whole of the great soul-theory which had hitherto so completely filled and dominated the minds of the superstitious and the thoughtful alike. For the first time in the history of the world, it proclaimed a salvation which each man could gain for himself and by himself, in this world, during this life, without any the least reference to God, or to gods, either great or small. Like the Upanishads, it placed the first importance on knowledge ; but it was no longer a knowledge of God, it was a clear perception of the real nature, as they supposed it to be, of men and things. And it added to the necessity of knowledge, the necessity of purity, of courtesy, of uprightness, of peace, and of a universal love far-reaching, grown great and beyond measure."

While Self, thus, that hypothetical agent behind the soul, disappears in the teachings of Buddhism, the conception soul or mind is not abolished and the idea of soul-transmigration gains a new importance. The pre-Buddhistic notion of a soul flitting about and seeking a new abode in another body was given up by Sâkyamuni for the more correct idea of a transfer of the Sangskâras according to the law of Karma. Buddhism recognises the law of Karma as irrefragable and bases upon it the unfailing justice of the moral law.

Concerning the migration of souls underlying the moral of the Jâtaka-tales in the "Buddhist Birth Stories," Prof. Rhys Davids says in the preface to his translation, p. lxxv :

"The reader must of course avoid the mistake of importing Christian ideas into this Conclusion by supposing that the identity of the persons in the two stories is owing to the passage of a 'soul' from the one to the other. Buddhism does not teach the Transmigration of Souls.\* Its doctrine would be better summarised as the Transmigration of Character; for it is entirely independent of the early and widely-prevalent notion of the existence within each human body of a distinct soul, or ghost, or spirit."

The same author says in his manual of "Buddhism." p. 104 :

"As one generation dies and gives way to another—the heir of the consequences of all its virtues and all its vices, the exact result of pre-existing causes; so each individual in the long chain of life inherits all, of good or evil, which all its predecessors have done or been; and takes up the struggle towards enlightenment precisely there, where they have left it."

Speaking of Karma, Professor Davids explains the nature of Buddhism as follows :

"Most forms of Paganism, past and present, teach men to seek for some sort of happiness here. Most other forms of belief say that this is folly, but the faithful and the holy shall find happiness hereafter, in a better world beyond. Buddhism maintains that the one hope is as hollow as the other; that the consciousness of self is a delusion; that the organised being, sentient existence, since it is not infinite, is bound up inextricably with ignorance, and therefore with sin, and therefore with sorrow. 'Drop then this petty foolish longing for personal happiness,' Buddhism would say! 'Here it comes of ignorance, and leads to sin, which leads to sorrow; and there the conditions of existence are the same, and each new birth will leave you ignorant and finite still. There is nothing eternal; the very cosmos itself is

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\* I. e., of âtmans.

passing away; nothing is, everything becomes; and all that you see and feel, bodily or mentally, of yourself will pass away like everything else; *there will only remain the accumulated result of all your actions, words, and thoughts.*\* Be pure then, and kind, not lazy in thought. Be awake, shake off your delusions, and enter resolutely on the "Path" which will lead you away from these restless, tossing waves of the ocean of life;—the Path to the Joy and Rest of the Nirvâna of Wisdom and Goodness and Peace!"

Rhys Davids says: "There will only remain the accumulated result of all your actions, words, and thoughts." True; but why does he say "only"? The accumulated result of your actions (viz., your *sangskâra*) *are* your own being. They constitute your mind so long as you live, and there is no self behind them, no ego, no *âtman*, no metaphysical soul-monad. Thus it appears that, according to Buddhist notions, we ourselves continue in the accumulated results of our actions. Since Prof. Rhys Davids fails to bear in mind that our *Sangskâras* are we ourselves, it is perhaps natural that he, although one of the profoundest of Buddhist scholars, does not, in spite of his perfect knowledge of facts, appreciate the importance of the Buddhistic conception of Karma and the migration of soul. I do not say that he misunderstands this part of the Buddhist doctrine; but I say that he does not appreciate it. He continues the passage just quoted:

"Strange is it and instructive that all this should have seemed not unattractive these 2,300 years and more to many despairing and earnest hearts—that they should have trusted themselves to the so seeming stately bridge which Buddhism has tried to build over the river of the mysteries and sorrows of life. They have been charmed and awed perhaps by the delicate or noble beauty of some of the several stones of which the arch is built; they have seen that the whole rests on a more or less solid foundation of fact; that on one side of the keystone is the necessity of justice, on the other the law of causality."

Then, he adds:

"But they have failed to see that the very keystone itself, the link between one life and another, is a mere word—this wonderful hypothesis, this airy nothing, this imaginary cause beyond the reach of reason—the individualised and individualising force of Karma.

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\* Italics are ours.

Prof. Rhys Davids adds in a foot-note :

" Individualised, in so far as the result of a man's actions is concentrated in the formation of a second sentient being ; individualising, in so far as it is the force by which different beings become one individual. In other respects the force of Karma is real enough."

Modern science teaches that it is function which creates the organ, and, *vice versa*, the organ is but the visible result of innumerable former functions. This may be considered as a modern restatement of the Buddhist doctrine of the Sangkhāras. All the seeings of ancestral eyes continue to live in our eyes. Our ancestors are not dead ; they are still here in us ; and by ancestors the Buddhist understands not only progenitors, but also those who formed our soul. Sākyamuni says to his father, that not he and his fathers, the Kings of the Sākya, but the Buddhas of former ages were his ancestry.

In the name of Buddhism, I venture to make a reply to Prof. Rhys Davids : Buddhism has torn down the imaginary fence which separates man's self from other selves. He who fails to see the link between one life and another, or speaks of it as an "airy nothing," still holds to the illusion of self. He who abandons the idea of self must recognise the sameness of two souls consisting of the same Sangskāras. Otherwise we ought to deny also the sameness of the "I" of to-day and of yesterday. That which constitutes the identity of person in one and the same individual is only the continuity and the sameness of his character. The "I" of to-day has to take all the consequences of the actions which the "I" of yesterday performed. Thus the individualised Karma of future times will reap all that which the individualising Karma of the present time sows.\*

And, strange enough, this Buddhistic conception of the soul is quite in harmony with the views of the most prominent psychologists of Europe.

The objection may be urged against the Buddhist conception that we do not choose to look upon the men who in future times will represent the incarnation of our Karma as identical with ourselves ;

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\* For an excellent restatement of the Buddhist conception of Karma from the pen of a famous naturalist, see the quotation from Professor Huxley's lecture on "Evolution and Ethics," on page 412 of the present number of *The Monist*.

we prefer to look upon them as altogether different beings. But here the Buddhists will have the advantage. The identity obtains whether it be recognised or not. It is real, for the laws of nature recognise it; it is an established fact. These future incarnations of our Karma inherit our character, together with all its blessings and its curses, in the same way as "I" of to-day am benefited or hampered by my actions from the days of my childhood, it matters little whether I choose to recognise the identity of myself or not.

We can have no proper conception of the action of the moral law until we understand the intercoherence of soul-life. So long as we cut it up into selves, we shall never cease to be puzzled with psychical, philosophical, and moral problems which appear insolvable and incomprehensible.

The great majority of people who consider themselves as orthodox Christians are no doubt believers in the *âtman* theory of the soul, postulating a self as the agent behind soul-life and looking upon it as the soul proper; yet the great representative authorities of Christian orthodoxy, such men as the Apostle St. Paul, Thomas Aquinas, Eckhart, Tauler, Ignatius Loyola, and many others show strong tendencies to the doctrine of *anâtman*, or the surrender of the self as the soul proper. We are shocked at the nihilism of the Buddhist whose highest aspiration it is to root out his soul, viz., his *âtman* or self, in order to attain *Nirvâna* and become a Buddha, but we take no offence when St. Paul says: "I am crucified with Christ, yet not I but Christ liveth in me."

#### THE MEANING OF NIRVÂNA.

We have learned that it is as natural as it is erroneous for men exclusively trained in Western modes of thought, to look upon the principal doctrine of Buddhist psychology as a bare and flat denial of the soul. In the same way and for similar reasons it is as natural as it is erroneous for Western minds educated in Christian schools to look upon the *Nirvâna* of Buddhism as an annihilation, and to characterise Buddhist ethics as quietism.

*Nirvâna*, the ideal goal of the fully enlightened disciple of Buddha, is the most important term in the religious system of Buddhism;

it is the corner-stone of the whole structure, and yet, judging from the various interpretations of the word and the controversies that have been waged about its meaning, its application must be either very ambiguous, or it contains great difficulties for Western minds.

The common definition of "Nirvâna" among all Buddhists is "deliverance," viz., deliverance from evil, or salvation. The question is, what is the nature of this deliverance?

The etymology of the word is obvious enough. Nirvâna means "extinction," viz., the "extinction of self," which is generally supposed to be the definition of the term given by the Hinayâna school of the old southern Buddhism.\* Those representatives of the Mahâyâna school of Japan, however, who visited the World's Parliament of Religions, are wont to describe Nirvâna as "the complete attainment of truth." In their conception, Nirvâna is attained by the extinction of the illusion of self, with all it implies, covetousness, lust, and all sinful desires.

The main issue of all the discussions concerning the term Nirvâna is the problem whether it must be conceived as a positive or a negative state of existence, as an eternal rest or a life in paradise, as a complete annihilation or the bliss of absolute perfection. In order to settle this much mooted question, not by an *a priori* off-hand method, but by systematically consulting the old Buddhist authorities, the Professors F. Max Müller and Childers have collected and compared great numbers of passages in which the word Nirvâna occurs, and the result is that "there is not one passage which would require that its meaning should be annihilation," while "most, if not all," would thereby "become perfectly unintelligible."

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\* Northern Buddhists make a distinction between Hinayâna or "small vehicle" (viz., of salvation) and Mahâyâna or "great vehicle"; the former is the Southern, the latter the Northern school of Buddhist thought; the former prefers to some extent negative and philosophically strict definitions, while the latter aims at positive and religious expressions; the former represents upon the whole more faithfully the historical traditions of Buddha, while the latter, in their aspiration to extend salvation to the broad masses of mankind, have admitted many fantastical elements. We must add, however, that these contrasts are in reality not so sweeping as they appear in a general formula, and the distinction of the Hinayâna and the Mahâyâna, although very convenient for certain purposes, is admissible only within certain limits.

The proposition has been made that there are several kinds of Nirvâna, but Professor Childers regards this theory as a complete failure ; he says :

"An extraordinary error, originating, I think, with Burnouf, and repeated unsuspectingly by several eminent European scholars, has done much to involve the question of Nirvâna in needless doubt and obscurity. It is the belief that there are three degrees of Nirvâna, viz., Nibbâna, Parinibbâna, and Mahâparinibbâna (ordinary Nirvâna, complete Nirvâna, and the great complete Nirvâna). This idea is strangely wide of the truth, for Parinibbâna means merely Nirvâna, or the attainment of Nirvâna, and Mahâparinibbâna means nothing more than the death of Buddha."

Professor Oldenberg states the problem of Nirvâna in the following passage :

"Some have thought to find the answer to this question contained in the word Nirvâna itself, i. e., 'Extinction.' It seemed the most obvious construction that extinction is an extinction of being in the Nothing. But doubts were soon expressed as to the propriety of so summary a disposal of this question. It was quite allowable to speak of an extinction in the case—and the term was most incontrovertibly used by the Indians in the case—where being was not annihilated, but where it, freed from the glowing heat of suffering, had found the path to the cool repose of painless happiness. Max Müller has above all others maintained with warm eloquence the notion of Nirvâna as the completion but not as an extinction of being. His position is, that although later Buddhist metaphysicians have undoubtedly regarded the Nothing as the supreme object of all effort, yet the original teaching of Buddha and the ancient order of his disciples was different : for them the Nirvâna was nothing more than the entry of the spirit upon its rest, an eternal beatitude, which is as highly exalted above the joys, as it is above the sorrow, of the transitory world. Would not, asks Max Müller, a religion, which lands us at last in the Nothing, cease to be a religion ? It would no longer be what every religion ought to be and purports to be, a bridge from the temporal to the eternal, but it would be a delusive gangway, which suddenly breaks off and shoots a man, just when he fancies he has reached the goal of the eternal, into the abyss of annihilation."

Professor Rhys Davids sums up his discussion of the meaning of Nirvâna in the following words :

"It is the extinction of that sinful, grasping condition of mind and heart, which would otherwise, according to the great mystery of Karma, be the cause of renewed individual existence. That extinction is to be brought about by, and runs parallel with, the growth of the opposite condition of mind and heart ; and it is complete when that opposite condition is reached. Nirvâna is therefore the same thing as

a sinless, calm state of mind ; and if translated at all, may best, perhaps, be rendered 'holiness'—holiness, that is, in the Buddhist sense, perfect peace, goodness, and wisdom."

Professor Childers presents us with a careful exposition of the problem in his "Pâli Dictionary," *sub voce* Nibbâna, the Pâli word for Nirvâna. He says :

"The difficulty is this. It is true that many expressions are used of Nirvâna which seem to imply annihilation, but on the other hand, other equally numerous and equally forcible expressions are used which clearly point to blissful existence. Thus Nirvâna is called Freedom from Human Passion, Purity, Holiness, Bliss, Happiness, the End of Suffering, the Cessation of Desire, Peace, Calm, Tranquillity, and so on. How is this discrepancy to be reconciled ? I reply, the word *nibbâna* is applied to two different things, first that annihilation of being which is the goal of Buddhism, and secondly, the state of blissful sanctification called *arahatta*, or Arhatship, which terminates in annihilation. This fact at once explains the apparent contradiction.

"At first sight it may appear inexplicable that the same term should be applied to two things so different as annihilation and blissful existence ; but I think I am able to show that after all the phenomenon may be easily accounted for. . . . Thus, if we say 'Nirvâna is the reward of a virtuous life,' this may, strictly speaking, mean that annihilation is the reward of a virtuous life ; but since annihilation cannot be obtained without Arhatship, the idea that Arhatship is the reward of a virtuous life, inevitably presents itself to the mind at the same time.

"Although expressions like 'extinction is bliss' may sound strange or even ridiculous to us, who have from our earliest infancy been taught that bliss consists in eternal life, to a Buddhist, who has always been taught that existence is an evil, they appear perfectly natural and familiar : this is a mere question of education and association ; the words 'extinction is bliss' convey to the mind of a Buddhist the same-feeling of enthusiastic longing, the same consciousness of sublime truth, that the words 'eternal life is bliss' convey to a Christian."

Thus we have according to Professor Childers the bliss of Arhatship and the complete extinction of being, one as the cause of the other. The Arhat, on reaching the goal of Nirvâna, ceases to exist as an individual person. He says :

"The doctrine of Buddha on this subject is perfectly explicit ; he even predicted his own death. Now, to be the ultimate goal of Buddhism, Arhatship must be an eternal state, for if it be not eternal, it must sooner or later terminate, either in annihilation, or in a state which is not blissful, in either case it is not the goal of Buddhism. But since Arhats die Arhatship is not an eternal state, and therefore it

is not the goal of Buddhism. It is almost superfluous to add that not only is there no trace in the Buddhist scriptures of the Arhats continuing to exist after death, but it is deliberately stated in innumerable passages, with all the clearness and emphasis of which language is capable, that the Arhat does not live again after death, but ceases to exist. There is probably no doctrine more distinctive of Çakymuni's original teaching than that of the annihilation of being."

This solution appears to be nihilistic ; but it seems to me that the complete annihilation of Gautama Siddhartha does not imply the complete annihilation of Buddha. Buddha is said to have entered Nirvâna when he died. Yet at the same time we are told that Buddha had attained Nirvâna already during his life. Indeed, enlightenment and Nirvâna are, among all Buddhists of the Hinayâna as well as the Mahâyâna exact synonyms. Nirvâna, the extinction of the illusion of self, is the condition of enlightenment, or perfect understanding of truth. A Buddha is an ideal construction of a man in whom all error and the consequences of error, desires, and sin, have been abrogated ; his will is purified, his thoughts are undimmed by illusions, and his mind consists of a perfect knowledge of truth.

There is among orthodox Buddhists no doubt at all that when a Buddha dies his physical existence is dissolved into its elements ; and this dissolution is regarded as a final deliverance of that part of man's nature which is the cause of pain and suffering ; but the truth, being that element which constitutes his Buddhahood, remains. The life in the flesh is ended, but the life in Nirvâna continues. Now, as Buddhahood is considered the aim of all evolution of life, while the by-paths of sin and error, which consist in circles of useless migrations, lead us away from our goal, Buddha is praised for having escaped the painful repetition of the course of migrations. A Buddha has reached the goal and has attained eternity. He is re-born into the world of error, only to appear as a teacher to point out to others the escape from illusion, sin, and death.

According to the orthodox Buddhist conception there is no doubt about it that the incarnation of Buddha in the person of Gautama Siddhartha has passed away. Gautama has died and his body will not be resurrected. But Buddha continues to live in the body of the Dharma, i. e., the law or religion of Buddha ; and, in so far

as he is the truth, he is immortal and eternal. The whole world may break to pieces, but Buddha will not die. The words of Buddha are imperishable. We read in the "Buddhist Birth Stories" the following remarkable passage which strongly reminds us of Matthew xxiv, 35.\* One of the Bodhisattvas, taking the resolution of becoming a Buddha, says :

" The Buddhas speak not doubtful words, the Conquerors speak not vain words,  
 There is no falsehood in the Buddhas,—verily I shall become a Buddha.  
 As a clod cast into the air doth surely fall to the ground,  
 So the word of the glorious Buddhas is sure and everlasting.  
 As the death of all mortals is sure and constant,  
 So the word of the glorious Buddhas is sure and everlasting,  
 As the rising of the sun is certain when night has faded,  
 So the word of the glorious Buddhas is sure and everlasting.  
 As the roaring of a lion who has left his den is certain,  
 So the word of the glorious Buddhas is sure and everlasting.  
 As the delivery of women with child is certain,  
 So the word of the glorious Buddhas is sure and everlasting."

Christ, when taking leave of his disciples, comforts them, saying, "Lo I am with you alway even unto the end of the world," and Buddha expresses the same idea when in the hour of his death the Mallas are anxious to behold the Blessed One. Buddha says :

" Seeking the way, you must exert yourselves and strive with diligence—it is not enough to have seen me ! Walk, as I have commanded you ; get rid of all the tangled net of sorrow ;

" Walk in the way with steadfast aim. . . . A sick man depending on the healing power of medicine,

" Gets rid of all his ailments easily without beholding the physician. He who does not do what I command sees me in vain, this brings no profit ;

" Whilst he who lives far off from where I am, and yet walks righteously, is ever near me ! A man may dwell beside me, and yet, being disobedient, be far away from me." (*Sacred Books of the East*, XIX, pp. 289-290.)

He who knows the truth and leads a life of truth, walking in the eightfold path of righteousness, has attained to Nirvâna and is with Buddha. And this view can only be called nihilism if Truth is an unmeaning word, and if moral aspirations are destructive of life.

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\* Cf. also Mark xiii, 31 ; Luke xvi, 17 ; Luke xxi, 33.

There are many synonyms and explanatory epithets of Nirvâna, among which are such expressions as the Imperishable, the Infinite, the Eternal, the Everlasting, the Supreme, the Transcendent, the Formless, the Void, the Unconditioned, the Goal, the Other Shore, Rest, the True or the Truth. Nirvâna is compared to "an island which no flood can overwhelm," to a "city of peace," the "jewelled realm of happiness," "an escape from the dominion of Mâra," the tempter, or the evil one; and the disciple of Buddha, we are told, will overcome "the world, the world of Yama,\* and the world of gods." The Siamese always refer to it as in the phrases "Nirvâna is a place of comfort where there is no care; lovely is the glorious realm of Nirvâna." In Chapter XXVI of the Dhammapada we read:

"When you have understood the destruction of all that was made, you will understand that which was not made."

The most negative term of all the synonyms of Nirvâna is the word "the Void," and its mere existence in Buddhist books appears to favor the nihilistic conception of Buddhism. But what, in that case, shall we make of such expressions as "the voidness alone is self-existent and perfect"? The "abstract" may be a more appropriate translation than "the void," at least it would be less objectionable to those who have devoted themselves to the study of the philosophers of abstract thought.

It is sometimes difficult to understand the reason why an idea such as hollowness or emptiness or voidness, which to us denotes the absence of existence, has become pregnant with meaning in other languages; and we must be careful not to impute the negativism of our speech to the thought of others. Thus we find, on an old palm-leaf manuscript written in Sanskrit and preserved since 609 A. D. in the Buddhist monastery of Horiuzi, Japan, "emptiness" identified with "form";† and that most remarkable philosopher of China, Laou-tze, gives us the key to the probable solution of the problem when he says in "Tâo-Teh-King," XI:

\* The god of Death

† See page 48 in *The Ancient Palmleaves*, edited by F. Max Müller and Bunyin Nanjio. Appendix by G. Bühler. (Oxford, 1884.)

"The thirty spokes unite in the one nave ; but it is on the empty space (for the axle), that the use of the wheel depends. Clay is fashioned into vessels ; but it is on their empty hollowness that their use depends. The door and windows are cut out (from the walls) to form an apartment ; but it is on the empty space (within), that its use depends. Therefore, what has a (positive) existence serves for profitable adaptation, and what has not that for (actual) usefulness."

Buddha himself abstained from making any positive statements as to the nature of Nirvâna. Whether we call it by positive or negative names is a matter of indifference and does not conduce to holiness. In this sense Buddha answers the question of Mâlukya : "Does the Tathâgata live on beyond death or does he not live on beyond death ?" Buddha says :

"If a man were struck by a poisoned arrow, and his friends and relatives called in a skilful physician, what if the wounded man said, 'I shall not allow my wound treated until I know who the man is by whom I have been wounded, whether he is a noble, a Brâhman, a Vaiçya, or Çudra,'—or if he said, 'I shall not allow my wound to be treated until I know what they call the man who has wounded me, and of what family he is; whether he is tall, or small, or of middle stature, and how his weapon was made with which he has struck me.' "

This much is certain, that Buddha, while speaking of the bliss of Nirvâna, denied the continued existence of man's individualised body. Arhatship was eternal to him, but the Arhat dies.

Surrounded by these difficulties and contradictory opinions, let us bear in mind how close the resemblance is between the Buddhist idea of Nirvâna and the Christian hope of Heaven. It has often been remarked that many passages of the sacred writings of Buddhism would remain perfectly intelligible if we replace the word Nirvâna by Heaven. This would, in one respect, be very misleading ; Christians cling to the idea that in heaven the personality of the soul is preserved as a separate and discrete entity. The Christian hope of resurrection longs for a preservation of the ego, not of the mind. And on this point Buddhism is very unequivocal. Buddha denies the existence of any soul-substratum, or ego-entity ; he rejects the old Brâhmanical doctrine of the âtman, or self, which is said to be the transcendental subject of man's sensations, thoughts, and volitions. But while there is an obvious difference between Nirvâna and Heaven, there is also a close resemblance not only of

allegorical expressions and in descriptions of mystics, but also in the attempt at defining its nature in exact terms. There are some remarkable passages in the New Testament, one of which indicates not less clearly that the final aim of Christ's mission is the obliteration of personality by saying, "that God may be all in all," (I Cor. xv, 28) and this final aim is characterised in the words: "There remaineth therefore a rest for the people of God" (Hebr. iv, 9). Comparing this rest to a great Sabbath the Apostle says: "He that is entered into his rest, he also has ceased from his own works as God did from his. Let us labor therefore to enter into that rest." And Jesus himself says, "Take my yoke upon you . . . and ye shall find rest unto your souls." In the face of these passages we can scarcely say that Christianity regards Heaven as a locality, and when we try to define positively what the orthodox Christian position is, or ought to be, we shall find ourselves implicated in no less intricate historico-philological problems than our Pâli scholars are in their investigations of Nirvâna. When Christian missionaries discovered some Christian color-prints of Jesus and biblical stories in Thibet, the Lama (as we read in Schlagintweit's "Buddhism in Thibet," p. 99) presented to them his view of the Christian salvation, as follows:

"Christianity does not afford final emancipation. According to the principles of their religion, he said, the pious are rewarded with a re-birth amongst the servants of the supreme God, when they are obliged to pass an eternity in reciting hymns, psalms, and prayers in his glory. Such beings, he argued, are consequently not yet freed from metempsychosis, for who can assert that in the event of their relaxing in the duty assigned them, they shall not be expelled from the world where God resides and in punishment be re-born in the habitation of the wretched."

Schlagintweit adds:

"He must have heard of the expulsion of the bad angels from Heaven."

The Lamaistic misconception of the Christian Heaven seems to be analogous to the Christian misconception of the Buddhist Nirvâna. One is quite as excusable as the other.

Schlagintweit says, that "genuine Buddhism rejects the idea of a particular locality being appropriated to Nirvâna," and Nâgasena says to King Milinda, "Nirvâna is wherever the precepts can be observed . . . it may be anywhere." When these passages are com-

pared with the doctrine of Jesus, who says: "The kingdom of God is within you," we should not be astonished to find some mystic Lamas of Thibet declare that since the Christian doctrine of Heaven, according to Christ's own teaching, does not imply the positive existence of a domain somewhere in space, it implies an utter and desolate nihilism.

Schlagintweit\* says: "The sacred Buddhist books declare at every occasion that it is impossible positively to define the attributes and properties of Nirvâna." A Thibetan Buddhist scholar might say the same thing to his countrymen in explanation of the Christian conception of Heaven.

If we were to hunt for Christian expressions of Heaven which are similar to the Buddhist similes of Nirvâna, we could find plenty of them, especially in the sermons of the mystics. Those who are inclined to philosophical speculation present the closest approach to a so-called negative formulation: Heaven, not otherwise than Nirvâna, is praised as an utter extermination of self; self disappears in the omnipresence of God, and reappears only as the transfigured standard-bearer of the cause of righteousness.

Whether or not this view is to be regarded as nihilism should be judged from the course of ethics which is derived from it. If Buddhistic ethics are correctly characterised as quietism, we can justly classify its doctrines as nihilism. Now we find that the same objections made by Western people must have been made in Buddha's time by men trained in the schools of Brâhmanism; there is a passage in the Mahâvagga in which Buddha very plainly expounds his view of action and non-action. He admits that he teaches a certain kind of quietism, but he vigorously rejects the quietism of indolence and inactivity. We read in VI, 31, 4:

"Sîha, the general, said to the Blessed One: 'I have heard, Lord, that the Samâva Gotama denies the result of actions; he teaches the doctrine of non-action, and in this doctrine he trains his disciples. Now, Lord, those who speak thus, . . . do they say the truth or do they bear false witness against the Blessed One, and pass off a spurious Dhamma as your Dhamma?'"

\* *L. c.*, p. 99.

The answer given by Buddha is as follows :

"There is a way, Sîha, in which one speaking truly could say of me: 'The Samâva Gotama denies action; he teaches the doctrine of non-action; and in this doctrine he trains his disciples.'

"And again, Sîha, there is a way in which one speaking truly could say of me: 'The Samâva Gotama maintains action; he teaches the doctrine of action; and in this doctrine he trains his disciples.'

"And in which way is it, Sîha, that one speaking truly could say of me: 'The Samâva Gotama denies action; he teaches the doctrine of non-action; and in this doctrine he trains his disciples?' I teach, Sîha, the not-doing of such actions as are unrighteous, either by deed, or by word, or by thought; I teach the not bringing about of the manifold conditions (of heart) which are evil and not good. In this way, Sîha, one speaking truly could say of me: 'The Samâva Gotama, etc.'

"And in which way is it, Sîha, that one speaking truly could say of me: 'The Samâva Gotama maintains action; he teaches the doctrine of action; and in this doctrine he trains his disciples?' I teach, Sîha, the doing of such actions as are righteous, by deed, by word, and by thought: I teach the bringing about of the manifold conditions (of heart) which are good and not evil. In this way, etc."

In the same strain Buddha explains his doctrine of annihilation and contemptibleness, not as an absolute annihilation, but as an annihilation of sin and man's hankering after sin. He says :

"I proclaim, Sîha, the annihilation of lust, of ill-will, of delusion. . . .

"I deem, Sîha, unrighteous actions contemptible. . . .

"He who has freed himself, Sîha, from all conditions (of heart) which are evil and not good, which ought to be burned away, who has rooted them out, and has done away with them as a palm tree is rooted out, so that they are destroyed and cannot grow up again—such a person do I call accomplished in Tapas."\* (*Sacred Books of the East*, Vol. XVII, pp. 110, 114.)

Far from preaching quietism, Buddha's sermons, parables, and sentences abound in exhortations to indefatigable and energetic activity. We read in the *Dhammapada* :

"He who does not rouse himself when it is time to rise, who though young and strong, is full of sloth, whose will and thought are weak, that lazy and idle man will never find the way to knowledge [enlightenment].

"If anything is to be done, let a man do it, let him attack it vigorously."†

\* The literal meaning of Tapas is "burning"; it means self-mortification. Buddha rejects self-mortification and substitutes for it the eradication of all sinful desire.

† *Ibid.*, pp. 68 and 75.

The difficulty to a Western mind in the comprehension of the term Nirvâna lies mainly in our habit of conceiving the nature of the soul in the old Brâhmanical sense of an ego-entity as the doer of our acts, the perceiver of our sensations, and the thinker of our thoughts. In ninety-nine cases out of a hundred, he who denies the existence of that metaphysical being is understood by people educated in our present modes of thought as denying the existence of our soul itself.

Buddha taught the non-existence of the self, and understood by self the âtman of the philosophers of his time. Again and again he inculcates the emphatic injunction that the illusion of self must be overcome. The illusion of self is the secret cause of all selfishness; it begets all those evil desires (covetousness, greed of power, and lust) of which man must free himself. As soon as the illusion of self is overcome, we cease to think of injuring others for the benefit of ourselves.

The Buddhist conception of Nirvâna is most assuredly not the annihilation of thought, but its completion and perfection. We read in the Dhammapada, verse 21 :

"Earnestness is the path of immortality (Nirvâna), thoughtlessness the path of death. Those who are in earnest do not die; those who are thoughtless are as if dead already."

This does not savor of nihilism.

Buddhism is commonly classified as pessimism. This is true in so far as the Buddhist recognises the existence of suffering, but it is not true if by pessimism is to be understood that world-pain which gives up life and the duties of life in despair. Says Oldenberg, speaking of the Buddhist canon :

"Some writers have often represented the tone prevailing in it, as if it were peculiarly characterised by a feeling of melancholy which bewails in endless grief the unreality of being. In this they have altogether misunderstood Buddhism. The true Buddhist certainly sees in this world a state of continuous sorrow, but this sorrow only awakes in him a feeling of compassion for those who are yet in the world; for himself he feels no sorrow or compassion, for he knows he is near his goal which stands awaiting him, noble beyond all else."

The good tidings of Buddha's religion are not so much the

recognition of the existence of pain and care as the conquest of evil and the escape from suffering. The following verses from the Dhammapada have no pessimistic ring :

"Let us live happily then, not hating those who hate us ! Among men who hate us, let us dwell free from hatred !

"Let us live happily then, free from ailments among the ailing ! Among men who are ailing, let us dwell free from ailments !

"Let us live happily then, free from greed among the greedy ! Among men who are greedy, let us dwell free from greed ! "

The Buddhist Nirvâna, accordingly, can only be conceived as a negative condition by those who are still entangled in the illusion of self. Nirvâna is not death but eternal life, not annihilation but immortality, not destruction but indestructibility. Were truth and morality negative, Nirvâna would be negative also ; as they are positive, Nirvâna is positive. The soul of every man continues in what Buddhists call his Karma, and he who attains Buddhahood becomes thereby identical with truth itself, which is everlasting and omnipresent, pervading not only this world system, but all other worlds that are to be in the future. For truth is the same to-day as it will be to-morrow. Truth is the water of life, it is the ambrosia of the soul. The more our mind rids itself of selfishness and partakes of the truth, the higher shall we rise into that domain where all tribulations and anxieties have disappeared, for there sin is blotted out and death conquered.

EDITOR.

## LITERARY CORRESPONDENCE.

### FRANCE.

THE *Psychologie des idées-forces* will undoubtedly remain M. FOUILLÉE's definitive work. We meet here again the qualities of the vigorous dialectician, of the eloquent and incisive writer, so prominently displayed in M. Fouillée's previous works, and we remark again the author's intellectual subtlety, his marvellous skill in eluding the objections which apparently he meets, and his great familiarity with the dangerous art of interchanging problems. He has undertaken, however, a work of import and magnitude, which cannot fail to instruct the minds of his opponents on many points. Whether it is absolutely new, whether it marks the outbreak of a revolution in this department of thought, are questions of a different cast. Let us look more closely into the matter, keeping in mind its principal idea.

The great object of M. Fouillée (I have spoken of it before in *The Monist*) is to substitute for the psychology of "representations" a psychology of "actions and reactions." "In every state of consciousness," he says, "there exists always a volition opposed to or in favor of some action, and not simply a form of passive representation." At the bottom of all is "appetition," a dynamical element distinct from the qualitative element, which is the reason that ideas are forces. "The fundamental element, germinal in all living cells, is appetite, accompanied by more or less agreeable or painful emotions, concomitant with this or that motion, and provoking this or that motor reaction."

It is easy to interpret on these principles the facts of reflex mo-

tion, pleasure, pain, memory, etc. I can only point out here the ultimate conclusions to which M. Fouillée leads us, and for the rest we may say that the most interesting feature of M. Fouillée's work is not his psychology, but his metaphysics, taking that word in its best sense.

"A science more advanced than ours," he writes, "will find life everywhere, and with life also mentality to a certain extent, sensation, and appetite; but to reach this stage thinkers must exorcise the ghost of the unconscious." Rather than accept materialism with the dualism which it implies, "it is more logical," he maintains, "to assume that the thinking and willing subject has a mode of action that blends, or is identical, with the fundamental mode of action of objects, and that ideas are the true realities, which in the brain have simply reached a higher state of consciousness. . . . Will, being diffused everywhere in the universe, need only reflect itself progressively upon itself, thereby acquiring greater intensity of consciousness, to become in us sentiment and thought." And again, "the principle destined to dominate psychology will be ubiquity of consciousness and of will under forms more or less rudimentary, but all of which envelop a germ of discernment, a germ of well-being or ill-being, in fine, a germ of preference, and consequently that fundamental process of which the *idée-force* is the highest form."

In fine, appetite is at the bottom of all and is accompanied from the outset with pleasure and pain, with *consciousness*. These are the two facts, or the two hypotheses, about which M. Fouillée masses all his psychological conceptions, combating the idealists in the name of the first, the evolutionists in the name of the second, finally to arrive at a reconciliation of all idealism and naturalism in the conception of the *idée-force*, the *idée-activité*, which will refer to the same physiological unit, will, appetite, and consciousness.

But is it not just as true to say that our representations—our images, that is, the world of perception—mask actions and reactions in the eyes of psychologists? Does not psychology, in fine, when it treats of emotions, pleasure and pain, attention and character, really ascend to this very same primitive fact, here baptised appetite, desire, tendency, and so forth? To say, with M. Fouillée, a reflex ac-

tion is appetitive and not exclusively mechanical, is to insist upon a quality of the phenomenon which is supposed in the mechanism itself. If pleasure and pain become "states of consciousness" it is owing to a property of living matter. And as for memory, the sole fact of the diversity of memories, the foundation of aptitudes, seems to me to imply particular states of that sensibility, or appetite, which M. Fouillée tells us is its principal element. It would seem, then, that we only say what he does when we present states of consciousness as the psychological expression of physiological states, which we declare equivalent. But M. Fouillée's endeavors are directed beyond this point, namely, to reducing the physiological to the psychological, the physical to the mental.

With respect to recognising "life everywhere and with life mentality to a certain extent, sensation, and appetite," this is a mode of conception which does not detract in the least from the validity of previous psychological researches. For even though consciousness exist from the beginning, it is yet necessary to point out the stages of development at which it becomes pronounced and apparent. There is nothing *in esse*, we might say, which was not in the beginning *in potentia*. The interest of science is satisfied with nothing short of a real understanding of the modes by which things pass from potentiality to being, and of a clear exhibition of the genesis and evolution of that "consciousness," whose different states of being are so characteristic. When M. Fouillée speaks of "the permanence and the transformation of the modes of psychical energy," we agree with him. From nothing we can extract nothing. But this surely does not stand in the way of our attempting to discover how a thing originates from something and transforms itself into something, for there is always some additional thing interjected which is an epiphenomenon, or which at least is extraneously displayed and comes to enrich the primitive phenomenon, whatever our central hypothesis may be.

Now, in so far as the hypothesis of M. Fouillée consists of the statement that the thinking and willing subject has a mode of action which blends with the fundamental mode of action of the object (*l'objet pensée*), I do not dispute it, and perhaps up to this point our

whole difference is restricted to a somewhat different method of grouping known facts and of displaying our results. But if we go further and proclaim that ideas and will are the sole realities, the hypothesis assumes a less positive character. It is either Plato or it is Schopenhauer, and this does not exactly satisfy us. We have not a very extensive knowledge of ideas or of will ; and we shall abide by our knowledge of our representations and by the feeling of our personal emotions.

The work of M. Fouillée, however, will not have been in vain. It will save us from reaction to materialistic metaphysics and a great many are still in need of this assistance. That which is true and which must be retained is that we do not *explain* consciousness. As soon as we attempt to do it without expressly assuming it, we arrive in some form or other at a noumenon. Herbert Spencer has not avoided this rock, and howsoever more coherent the metaphysics of the *idée-force* is, it also does not deliver us from this difficulty.

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M. PAUL CARUS gives us a French edition wholly recast of his book *The Soul of Man*, under the new title of *Le problème de la conscience du moi*. The work is too well known to the readers of *The Monist* for me to speak of it in this place. I hope that it will not be without wide influence in our country, and I should be greatly surprised if the spirit of high moral and religious organisation, which inspires all the writings of M. Carus, did not soon attract the attention of many persons in France. For our situation in this respect is a very singular one. With us, psychological research has, especially during the last two decades, constituted nearly all of philosophy. Our reserve on the subject of vast intellectual constructions is extreme, and we have come to a standstill before the barriers of positivism established by August Comte. With regard to the religious problem this reserve amounts almost to indifference. In fact, on this subject we are plunged in an almost incurable scepticism, which has its most pronounced representatives in our real philosophers. The generation of 1848, or at least a small group of that generation, attempted a restoration of liberal Christianity ; but that was too much, or, rather, too little. To-day, if religiosity seems to

be renascent, it is only in the decadent literature and only under the color of mysticism. And we cannot expect any efficacious results from troubled spirits and feeble hearts. Our decadents, in fact, only cultivate their egos; they are incapable of broad views, and for the most part are diseased. The men of 1848, on the other hand, started from a just feeling of the social office of philosophy; unfortunately, they were not able to reconstruct it, or to base the religious sentiment, which they imperfectly understood, on a sufficient knowledge of the human soul.

Now, it is precisely with the study of the soul that M. Carus begins, whilst it is only upon psychology, as we have just seen, that M. Fouillée bases his efforts. They both meet in the affirmation of consciousness as a first reality. We should say, accurately, with M. Carus, the state of consciousness, the feeling of living substance. Whatsoever we do, we always grasp things under this point of view, and this is why the monism based on psychology, on the knowledge of the relations of our thought with the external world, with *that* of which we have images, will ultimately be a unitary conception of the world, while the old monistic systems, so called, (a distinction which M. Carus well makes,) are in fact only single-concept philosophies. The philosophies of times gone by bent all their efforts on finding some *single* fact of explanation,—movement, matter, intelligence, etc.,—and they give us thus only *logical* metaphysics. On the other hand it is necessary that a real general explanation should throw no shadow on any of the primordial facts; it should never consist of an arbitrary reduction of the elements of the world to any individual one of these elements.

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And now, while I am on this subject of depicting the public mind of France, I must mention an amiable little book which sends forth a clear angelus-note into the twilight of our beliefs. This little book bears the simple title *Philosophie de poche* (Pocket Philosophy).\* Its author is M. JEAN MACÉ, the founder of the “Ligue de l’enseignement” which is preparing the way for a reformation of our schools,

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\* Published by Hetzel. The other works are published by Félix Alcan.

at present a senator, but by taste still an educator,\* one of those rare men who unite with intellectual acuteness common-sense and kindness, and who take their years without growing old. M. Macé is not the champion of dangerous or fragile novelties. He declares himself religious, without definition. He finds God in the order of the world, and morality in the consciousness which we have of the order of the world. He does not make fine distinctions, and when he strolls into the domain of science, does so, as it were, purely for recreation. Man, he tells us in his summing up, should seek his happiness in the sphere in which his grandeur lies, "in the sentiment of his dignity, in the love of the true which puts him at peace with his reason, and in the love of the good which puts him at peace with his conscience." His God is "that for which mothers have found the name, the naïve personification of the idea of the good, that sweet and simple rule of life which we obey with confidence, which dispenses with all theology." And he adds: "The good God of the little children is still the most philosophical of all, the only one which is not an *x*. He goes straight to the heart without troubling the mind, in Him is our refuge. If you are not as one of these little children, says the Gospel, you shall not enter into the Kingdom of Heaven."

Surely there is nothing here which will cause violent revolutions in the world, and M. Macé gently gives us perfect freedom without demolishing any traditional barriers. But these simple lessons, these prescriptions of a salutary régime, are worth much more to us in preparing the way for the future than all the negative decrees of vain ignorance.

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I experience a feeling which amounts almost to painfulness when I pass from the book of M. Macé to that of M. MAURICE BONDÉL, *L'action, Essai d'une critique de la vie et d'une science de la pratique*. Far from being so facile and fluent, it is, on the contrary, difficult, and smacks of the school. And all the more pity it is, as its aim is high, and M. Bondel is one of those who could have got

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\* I would recommend to educators his *Contes du Petit-Château*, real masterpieces, and in a literary point of view superior to most romances.

much useful instruction from the Congress of Religions—that significant feature of your World's Fair.

His thesis consists in justifying the necessity of action and in showing that this conforms to the deepest aspiration of man. "Not being able hitherto," he writes, "to unite action perfectly with thought, nor conscience with science, we have all, both the boor and the philosopher, been obliged to remain like infants, naïvely docile, in the empiricism of duty." Suppose we follow this road; we shall soon see whether we shall have to regret it. But let us also make ourselves, by strict method, participants of the contrary course. For the matter of great importance to us is to know "whether beyond the obscurities through which we must march . . . whether, amidst all the aberrations of the mind and of the heart, there exist, despite all, the germs of a science and the principles of a profound revelation such that nothing shall appear arbitrary or unexplained in the destinies of each." It is necessary for us to bring face to face with errors, negations, and weaknesses of all sorts, the latent truth on which souls live and of which, perhaps, they die, for all eternity." That latent verity is the supposition of the supernatural, the unconquerable desire for a "saviour," the profound feeling of co-operating with God. And in the thought of M. Blondel the supernatural is given by Christian "revelation." I am very careful when skirting the precipices of dialectics. But the reader may judge for himself. I shall leave him in the vestibule of this work. Criticism can get no hold of matters of faith.

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I find myself restricted to a mere mention of the rather large volume of M. VICTOR DELBOS, *Le problème moral dans la philosophie de Spinoza et dans l'histoire du Spinozisme*, a conscientious study, but somewhat heavy; the excellent book of M. JULES PAYOT, *L'éducation de la volonté*; and *Les lois sociologiques*, by M. GUILLAUME DE GREEF, a Belgian author, known for several other works; *Le droit des femmes dans le mariage, études critiques de législation comparée*, by M. LOUIS BRIDEL of Geneva, where the question of the rights of women is seriously discussed.

I must also refer, with much regret at not being able to speak

at length of it, to the French translation of a work of M. TH. ZIEGLER which has already reached its fourth edition in Germany, entitled *La question sociale est une question morale*. This book is a remarkable one, and we read here with interest of what concerns the difficult problems of socialism, of the perfecting of the social condition of State and Church, of the family, of woman, and so forth. M. Ziegler discovers in this book a clear mind and one which is neither retrogressive nor Utopian.

LUCIEN ARRÉAT.

PARIS.

## CRITICISMS AND DISCUSSIONS.

### LOGIC AS RELATION-LORE.

REJOINDER TO M. MOURET BY MR. RUSSELL.

The strong and tolerant reply of M. Mouret to my criticisms demands from me my best consideration, not only on account of the ability and courtesy he has shown but also on account of the very important matters that are thus agitated.

I must trespass upon his patience still further, for so far am I from being more at one with him than before, that I fear that that community of view which he believed to exist between us, and which I certainly took to be the case, is in fact much less than either of us have been anticipating.

#### I. THE NATURE OF MATHEMATICS.

M. Mouret, if I judge him aright, is fully persuaded in his own mind that the mathematicians are lacking in philosophical competency, and are doing little if anything towards the right settlement of the fundamental principles and data of even their own branch of science. I, on the contrary, see in the works of the mathematicians, that which leads me to expect from them, or at least to expect in consequence of what they have accomplished and are going on to accomplish, a new and most illustrious phase in the history of philosophy.

M. Mouret tells us explicitly, that he has occupied himself in analysing the fundamental notions of mathematics, in part, by way of protest against certain doctrines that have the countenance of at least many of the French mathematicians. If I may judge from what I confess to be an altogether inadequate acquaintance with the writings to which M. Mouret refers, I should be inclined to say that he fails to do the men in question the complete justice that the dignity and worth of their work merits. They are, however, men of distinguished ability, and any attempt by me on their behalf would be both officious and presumptuous.

I feel moved, nevertheless, to offer a few words in regard to the question as to the meaning and scope of mathematics. The time is long past when mathematics can with any propriety be defined as the science of quantity. Such is the old

stock definition and no doubt the impression is very generally prevalent that mathematics is naturally confined within the range where quantity is a prominent feature of the things to be dealt with. But if nothing else than projective geometry and the theories of substitutions and of groups were extant, there would be enough to show that no pent-up region like the region of quantity can confine the powers of mathematics. When, however, we take notice of algebras like "Peirce's Linear Associative Algebra," the various logical algebras, and other very possible algebras that these suggest, and especially when we consult the splendid "Theory of Mathematical Form" of Mr. A. B. Kempe we begin to suspect what I dare say is really the truth, that mathematics is the imperial science, whose prime data and original principles must govern the entire range of intellectual exercise.

What then is mathematics? How is it to be defined? No competent answer can be given to these questions until we recognise that the soul of mathematics dwells not so much in the terms or things with which it deals, or even in the static relations, that may obtain in respect thereto as in the *operations* by which these terms or things may be put together or separated and by which the same and said static relations may be altered. Pure mathematics does not even require that all its data and results shall be conceivable, that is, that they shall be of such a nature as to excite in us those mental phenomena that we usually mean when we speak of sensations, notions, concepts, or perceptions. The square root of negative unity, and infinity, the curved, and four or more dimensioned spaces, are mathematical things that we ought not to expect to render (readily at least) into terms of ordinary mentality. Much familiarity with them may in time evoke corresponding mental sensations, perceptions, etc., but until these naturally emerge so as to accredit themselves according to their proper significance, we ought to regard these supra-conceptual things as obtaining in *notation* merely. Indeed it may be more than a fanciful manner of speech to say that in mathematical notation there is being evolved a new supra-intellectual faculty for man.

Mathematics is not, however, by any means lawless, nor is it metaphysical in any bad sense of that term. Variable, indeterminate, and incommensurable are indeed many of its things and functions respectively, but vague or inexact not at all. Even the supra-conceptual things above mentioned are as rigidly ruled by the mathematical constitutions as are all the rest. Nor are the same in any proper sense abstractions or compounded of abstractions. They are the suggestions and the results that have ensued in consequence of the nature of the mathematical *operations*. These have pleaded for what was needed in order to enable mathematics to fill itself out so as to occupy its own proper sphere, and hence the supra-conceptuals have been recognised and installed.

In this filling-out of the mathematical sphere as well as everywhere else in mathematics one supreme rule obtains, viz., the rule of *consistency*. No contradictions must be *involved*, but however the data and functions of mathematics are interworked, all must harmoniously co-operate and issue. In point of fact they not

merely do this but they relate and operate together so as to form one harmonious and mutually illuminating whole, in sum and by every detail. It is this that makes mathematics the *beau ideal* and great exemplar for all science and all philosophy.

Mathematics is based upon one original tenet, theorem, faith, or supposition, viz., that this universe of matter, energy, and mind is throughout consistent and reasonable or rather consistent (which *is* reasonable) or reasonable (which *is* consistent).

Another article of the mathematical creed, and one scarcely secondary, is this, There is one absolutely *unique* system of principles consisting of divers operations, relations, notions, and recognitions, which system is necessary and sufficient for the general organisation and explanation of the consistent and reasonable *All*: besides which system, and besides each element and detail of which system, there is naught else either sufficient or necessary for such organisation or explanation; and lacking which system or lacking in certain elements or details of which system, or lacking in some element or detail of which system, such organisation and explanation must proportionately fail. For brevity I will call this system of principles the *organonic* system, and the principles thereof the *organonic* principles.

Now mathematics is that model science or that commonwealth of model sciences, that observes, certifies, and applies the organonic principles, for the improvement of knowledge and belief.

While the question of the genesis of our knowledge of the organonic principles has a decided interest of its own it has little if any relation to their justification. Not how we came by them but what they really *are*, is the important question. Beside the questions as to *what* numerical unity really is, or as to *what* a straight line is, all questions as to how we acquired the notions of these prime data respectively fall into insignificance. We should not discard them even though it should turn out that we acquired them by questionable means. Our title to them is our perception that they naturally belong to us. Just such, too, is our title to the supra-conceptual recognitions. The imaginary unit is known to belong to us not alone by right of adoption, but principally because it exactly fits and fills out the numeric sphere, the other part of which has long been ours. While a knowledge of the genesis of the organonic principles may yield divers suggestions as to the nature thereof, it is nevertheless a knowledge of that nature that we principally need, and this is mainly a matter of observation and criticism.

The recognition and adoption by mathematics of the supra-conceptual entities and the coincident, necessarily implicit transition of the mathematical sovereignty from the passive things with which it deals to its operations, marks, in my judgment, an absolutely new era in mathematics, and through mathematics an absolutely new era in science and philosophy. It stands as a kind of scientific and philosophical Peak of Darien from which we look out on a new ocean for science and philosophy, an ocean palpable and differing in no essential respect from the regions with which we are familiar, but swelling with surges that signify a vastness until now undreamed

of, and yet an ocean for the exploration of which we are, at least in embryo, already furnished.

Here several reflexions push forward. The first is the sovereignty and exigency of the demand for consistency, completeness, unity. Monism is inevitable because nothing less is competent to effect any settlement that will actually settle. Hitherto it has been taken as a prime supposition, and one taken to be so obvious and insuperable that it has never even occurred to any one to challenge the same, that the manifold of *conceivable* things exhausted the data of science and philosophy, and would, could only its hidden organic scheme be once discovered, stand revealed as the all in all. In demand, however, for a unity, a consistency, a wholeness, that could not, nor would, otherwise emerge, and being moreover, as if in duty bound, in obedience to principles long approved as valid and in the highest degree fruitful, to appropriate, in some way, in its scheme certain somewhats that could not be banished, but were ever thrusting themselves forward in its very face and eyes, mathematics at last broke over the charmed circle of conceivable things, recognised and adopted as its own property the so-called *imaginary* data, and instead of finding itself put to absurdity and confusion, found itself, on the contrary, unshackled merely within a renewed, but immensely expanded, world of rigidly consistent verities, that contains the old world as a fragment.

This epoch in the history of mathematics, when its nature is duly appreciated, gives a most momentous lesson to science and philosophy. In philosophy especially we can no longer account the manifold of conceivable things as the all in all, and confine the exercise of our philosophical propensities within its range. We can no longer entertain any rational expectation of finding therein that consistency, completeness, and unity of which we are in search. We can now no more do this than could the old world, after the successful voyages of Columbus and his followers, account the mere eastern continent to be the entire earth, and expect to gain a full and competent knowledge of the earth by studying the geography of that continent only.

The second reflexion that pushes forward is that the true justifications of any sort of dialectic are to be found not so much as we have been wont to think, in the conceivability of things or even in the agreement of thought with things, unless that criterion is better understood and applied than it usually is. True thought does and must agree with things because true thought is only the expression, total or partial, of the organic principles which pervade thought and things alike. Things, when truly and adequately interpreted, exemplify the organic principles and suggest them to thought. But things may be badly or inadequately interpreted, and yet, owing to their fragmentary nature, there may be a thought, or system of thought, partial or untrue, that will accord with such interpretation. In short, while inconceivability may possibly be an argument against a certain thought or quasi-thought, and while the agreement of any assigned thought with things is certainly an argument in favor of the truth of that thought, this inconceivability and this agreement

are both of them uncertain in their significance. There is nowhere any other test of universal application and discriminating authority but that of *general mutual consistency*. This is at once necessary and sufficient to accredit and justify any thought, however inconceivable it may be. If it is said that a thought may, at some one time fully satisfy this criterion so far as can be ascertained, and yet, upon better information, fail therein, I reply, verily such may be the case, but in such a case, however much that thought may swerve from the truth, it will nevertheless mark out and revolve around a verity whose subsequent more exact delimitation it is that reveals the untrue aspect. The criterion laid down by Mr. Spencer, the inconceivability of the contrary, is only one way of stating the criterion of *general mutual consistency*, and is itself subject to the same qualification that has just been stated. The defect of Mr. Spencer's formula dwells in this, that in all that class of cases, by no means rare, in which we can conceive a contrary, we are left without a criterion, unless we say that those ideas are untrue whose contraries are conceivable, a conclusion that is obviously unjustified.

M. Mouret says that the mathematicians with whom he disagrees and whose doctrines served in part as the exciting cause of his essays, "consider mathematics as the science of combinations having for points of departure certain conventions made with numbers independent of reality in general and of the physical magnitudes in particular." If they really do this, they are certainly very loose in their habits of thought. But mathematicians are usually not thus given to looseness of thinking, however much they may scatter in their forms of expression. In such recondite regions of discourse as are those in view, there is great need of taking one not exactly and literally as he says, but according to his true intent and meaning, as gathered from his entire context. Says Challis :

"In a passage full of acuteness and good sense, Berkeley ['Theory of Vision,' § cxx] remarks how ill common language is adapted to be the vehicle of uncommon thought, and demands most reasonably that the reader shall strive to follow the thread of his ideas, rather than carp at his language and catch at hitches which the circumstances make inevitable."

I have before me an article by that illustrious French mathematician, M. Poincaré, whom, I take it, is a typical representative of the school of mathematicians that M. Mouret finds so poor in philosophy. In this article, M. Poincaré discourses of the Non-Euclidean Geometry and of axioms, and he does indeed speak of the axioms of geometry as conventions, or as *definitions in disguise*.

The truth is, as it appears to me, somewhat like this: There are real things which may be corporeal things, or relations, or operations; and there are *meanings*, or notions, or ideas; a part of which, at least, may represent real things, and are indeed themselves in a certain sense real; and there are *terms* which are intended to represent, firstly *meanings* and then, in some cases, through meanings, various real things that are not in themselves meanings merely.

Now, besides the various infirmities of terms in themselves, they may be put

together in any way that the mere rules of language permit, and when they are so put together as to form an assertion, there are in any case, two questions that may always arise; first, Is there any meaning expressed? and then, Is this meaning, if any, true or otherwise? In case any assertion is a definition or an attempted definition, it may express, or attempt to express, a status or an operation, or it may suppose or quasi-suppose such a status or operation. In such a case the further very important question may arise. Is this status or this operation one that is possible or *compassable*? If not, then the assertion, supposition, or quasi-supposition has really *no* proper meaning, although unfortunately in too many cases a lack of information or a vague unmathematical habit of mind lures many into the belief that a meaning is contained therein.

But definitions depend upon terms, and by no device of man can they free meaning from the trammels and limitations thus entailed, so long as we insist on confining ourselves to the express import of those terms. So insisting, try how we may, we must always at last resolve on some term or terms that shall be taken as known without more ado. Are we, then, tied down to the express import of terms? By no means, else poet and seer must always have gone to their graves undelivered of their burdens so precious to man in all generations. Signs and sign-systems of all sorts have, besides their express import, a *suggestive* power and function, and no signs or sign-systems have, for this behalf, so efficient a power and function, as have terms and language. How often even in the daily intercourse of man does he impart his meaning surely and exactly, nay, even more efficiently, by language that by its express import does not mean as he means, but which frequently, in its literal import, expresses the precise opposite of his real meaning. So in science, even in mathematics. There was never so bald a paradox, according to the express import of the terms used, as to say, "a point is a place without any size whatever," yet it tells the true intent and meaning without any reasonable cause for exception. It is meanings, then, that we are after, and terms and language are only so many convenient means towards that end. So far as the axioms and the mathematical points of departure relate to terms and language, they are and must be conventional.

Now, meanings are primarily matters of mental *status*, and, if as to any portions of discourse those who discourse together have the same meanings in the same connexions, or experience mental states that obtain the same in each, in a one-to-one correspondence as to the articulated parts, and in a general correspondence, as to the wholes, then to cavil at calling this a matter of convention, seems to me rather an exercise of logomachy than otherwise.

The truth really is that many of those propositions that are called axioms and many of the mathematical points of departure, are not axiomatical at all. Some of them admit of proof when once the real axioms are ascertained and once the requisite definitions are duly certified. Taking equality as the conjunction of "not more than" and "not less than," the so-called axiom: "Things that are equal to the same thing are equal to one another," may be proved thus.

Put  $A$  and  $B$  both equal to  $C$ . Then  $A$  and  $B$  are also equal. For  $A$  is "not more than"  $C$ , and hence  $C$  is "not less than"  $A$ .  $A$  is also "not less than"  $C$ , and hence  $C$  is "not more than"  $A$ . By precisely parallel reasoning,  $C$  may be proved to be both "not more than" and "not less than"  $B$ . Then  $A$  is "not more than"  $C$ , which is "not more than"  $B$ ; hence  $A$  is "not more than"  $B$ . So, too,  $A$  is "not less than"  $C$ , which is "not less than"  $B$ , and hence, again,  $A$  is "not less than"  $B$ .  $A$  is thus shown to be at once "not more than" and "not less than"  $B$ . But to be these is to be equal to  $B$ . *Q. E. D.*

There are other so-called axioms that are, as M. Poincaré says, merely definitions in disguise. Such is this one, "The whole is more than any part." Another one that may easily be taken to be very like the last one but which in reality is quite different, is this, "The whole is equal to the sum of all its parts." This is a proposition admitting of a proof that is somewhat lengthy, and that depends upon the definition of "equality," the definitions of "whole" and "part" and the definition of "sum," which definition depends itself upon the prior definition of the operation of addition, the definition of which operation depends again upon the knowledge derived from the actual performance of a problem; that is, from experience.

As above stated the possibility or *compassability* of certain states or operations may be brought into question. In many cases this can be determined affirmatively by actually effecting the state or operation in question. Then we have a problem solved and the corresponding knowledge gained by observation or experiment or whatever it may be called. At any rate by experience.

In other cases divers conditions and circumstances may prevent us from actually effecting the state or operation in question. We cannot go to infinity to try the experiment and see whether we can draw a line that will at once meet another line there and also at some finite point. In another class of cases we have no means of certifying what is the real state of the case. We cannot travel all over space so as to test it, and see if it is everywhere all alike. In still another class of cases we have no means of certifying what may be the real effect of certain of our operations. We cannot tell for certain whether the mere moving of a body around in space does or does not alter it in size or in shape. In all these cases of uncertainty our only resource is to resolve on what we will take to be true, and for the sake of the great convenience this course affords, abide by our resolutions; at least so long as they entail no inconsistency, or contradiction. In order, however, for this course to prove convenient we must agree together expressly or tacitly as to the meanings the propositions shall bear that formulate our resolutions. Such propositions are the only real axioms. All others rest at last upon experience or definitions.

If any one says that such conventions as these are "independent of reality in general," or, if they relate to the physical magnitudes, that they are independent thereof, then if by "independent" is meant independence in any other sense than that that reality or that the physical magnitudes, are silent in respect to the validity

of such conventions, such persons are surely, unqualifiedly, and totally mistaken and deserve even more than the reproaches that M. Mouret has heaped upon them.

## II. THE NATURE OF RELATIONS.

After all this long dissertation M. Mouret will surely have excuse to ask how the same is any rejoinder to his reply. I must maintain, however, that it is a rejoinder to the most serious parts of his reply, though made by general rather than by particular remarks.

I cannot admit that I failed to understand him in the main. The root of our disagreement lies in our different views of the nature of relations. As long as this difference remains I do not see how we can arrive at any community of view that would be worth any pains to effect. I said in my paper :

" Now besides the error of confounding relations with relationship it is a very common fault to think and speak of relations as being *between* two or more terms. This imports into thought the thoroughly misleading idea of an intervening independent existence for relations. Relations are attributive predicates of terms, and each one of them pertains strictly to its proper term or combination of terms, in the same sense for this turn (*pro hac vice*) that qualities are held to pertain to their so-called substances," etc.

This conception of relations together with my protest against the common view is almost ignored by M. Mouret. I grant that he conforms himself to the ordinary language as well as to that use of the same that is current in the so-called philosophy ; but as a student for a scientific logic, it was on the very account like to that, that I had occasion to make the caution above quoted, and I am not a little nonplussed to find M. Mouret treating the matter in the way he does. If I were the first to discern and employ this notion of a relation, I should, in face of the conduct of M. Mouret, feel great doubt lest I had gone wrong. But since this way of conceiving relations appears to me entirely plain as well as absolutely requisite to a scientific treatment thereof, and since, moreover, in this I only follow the example of DeMorgan and Peirce, and in so far as I am aware, with the single exception of M. Mouret, all the rest of those who in modern times have given any considerable attention to the subject of relations, I naturally feel entirely sure of my ground.

This matter is so fundamental that it calls for defence. Relations, of course, may like other things be of divers sorts ; but in so far as they are relations merely, they must be essentially alike. Hence the nature and characteristics that pertain to relations in their most naked estate must continue to pertain thereto in their every form.

I have to say in this connexion that my interest in the views of M. Mouret was mainly enlisted by his conception of logic. I either found in or read into his language a statement of certain somewhat inchoate ideas about fundamentals that had for a long time been ever and anon flitting athwart my mental horizon.

The title "logic" as it is usually employed is made to comprise several very sep-

arable fields of discourse. If such a separation were made and I had the choice on that behalf, I should, for reasons not relevant here, incline to give the old title "logic" to that division that deals with the phenomena of erroneous thinking and its correction, that is, to the doctrine of fallacies. But in that case logic could have no claim to the dignity of being the *scientia scientarum*. Before reasoning, good or bad, can have any occasion to be, the terms and relations upon which it operates must already obtain, and the operations that marshal the same into various arrays and that modify those terms, relations, and arrays in various ways must become extant. Hence the need of an "abstract and objective science that has for its domain the sum total of the exterior objects of knowledge considered independent of their particular nature." I took M. Mouret to mean by "exterior objects" not merely corporeal objects, but everything that bears the insignia of reality, every *fact*, no matter what its nature may be. These, when "*considered independent of their particular nature*," are stripped of every vestige of determination and stand nakedly as so many mere somethings all exactly alike, different indeed as instances but indifferent in all other respects. Corporeal objects, time and all its events, space and all its configurations, numbers, orders, arrays, motions, forces, institutions, etc., etc., and all their evolutions and involutions, etc., etc., remain as a plurality of indifferent instances only.

Now, "can these dry bones move?" Yea, verily. Let but that moving spirit that takes on so many phases, viz., distinction, sundering, denial, etc., etc., and in virtue of which these things "*independent of their particular nature*," obtain as distinct instances, and also the antithesis of that moving spirit, which antithesis also takes on the corresponding antithetical phases, viz., sameness, gathering, affirmation, etc., etc., in virtue of which the said things "*independent of their particular nature*," obtain as copies of one another; let but these continue to operate and subsist, and "form" will evolve in endless luxuriance. Those apparently dependent but really fundamental things that are relations, will at every stage appear as if newly born, and out of this fourfold root, to wit: the original of distinction, etc., the original of sameness, etc., the sense of relation, and the sense of "form" will grow sufficient reasons whereby to explain all experience.

This "form" and its components generate in us certain psychological effects which are not merely full of interest on their own account, but *with their suggestions* form the very occasions for us to perceive "form" and its components.

But these psychological effects, except for the form that may pervade those of them that are complex, are of no moment for science or philosophy. They are ultimate irresolvable facts, and as such only so many "things" to be taken "*independent of their particular nature*" like all the rest. *Mere* psychology, that is to say, psychology less the "form" that it exemplifies, has no instruction to impart that is of any benefit to science or philosophy. These very psychological effects in their turn have been created by and depend upon "form." They depend upon that which we call "mind," or rather that which we call "mind" is the organised (that is "formed") aggregate of these psychological effects. Mind in its turn depends

upon the organised (that is "formed") aggregation of brain-stuff, and the study of this as well as the study of mind is and can be no other than the study of the "form" exemplified therein, and no other or different in its essential nature from the study of "form" in general.

In short, whatever may be the true nature of the universe, whether taken in its corporeal aspect or in its aspects dynamical or mental, and whatever may be our efforts to comprehend the same in detail or in general, it is amenable to our efforts only as a manifold of "things," mere "things"—some undistinguished and some distinguished from some others. This absence of distinction or presence of distinction is throughout governed by relations, and the distribution of these undistinguished and distinguished things and arrays of things throughout the manifold is modulated by those things we call "laws," giving occasion for us to perceive, study and organise the "forms" that variously obtain.

But the universe, in spite of its segregate nature, is also a unitary whole. This obtains in very virtue that it is throughout pervaded by relations and that it belongs to the very nature of relations thus to connect things together. This is insuperably the case, because, to point out a truth by a paradox, (since such is the only way by which it can be expressed,) the very absence of a relation is itself a relation. There is nothing, nor can there be anything "absolute." Each "thing" is related (usually in many ways) to each other thing in the universe. This is not in virtue of any office that knowing beings fulfil, but because such is the nature of the universe. These relations obtain whether any one perceives them or not, and so it is error to think or speak as if the existence or non-existence, in fact, of certain relations were conditioned by what we may do or omit, whether our conduct be physical or mental. In short, and ignoring for this turn the deeper truth that for the behests of science or philosophy relations are the very "stuff" of objects, we may say that by relations the universe of things is knit and re-knit, again and again, in all sorts of ways into a unitary whole, of which the details mutually explain and illustrate each other.

I have said enough, I think, to inform M. Mouret that the logic, science, and philosophy that I favor is throughout "objective" in its nature. M. Mouret will, I trust, pardon me, but it appears to me that he is biassed by a certain phobia he has towards things metaphysical, subjective, introspective, and *a priori*. I am as much the adversary of these when they are uncomprehended or miscomprehended and hence ill employed, as he can possibly be, but I conceive the fault to be not so much those things themselves as a certain spirit, attitude, and method that goes along with the lack of orientation with regard to them. Not so much metaphysics as metaphysicism is the bane of science and philosophy. While we are denouncing all tolerance of "metaphysical entities" some one may ask us what kind of entities are numbers, orders, forces, and the whole brood of entities, complex and less complex, among which mathematics makes its home.

As for *a priori* certitude, the mathematician should be the very last one to dis-

parage its validity or value. It is simple enough in its nature and it results from the truth that the universe is interknit together by a network of relations that taken by certain details are "formal," that is, are "forms," which forms and their respective components are in general susceptible of various definitions. We know that one and one make two for the simple reason that two is no other than what one and one make. We know that two and two make four of absolute necessity at all times, in all places, and under all circumstances, because that which we call four has and can have no other existence than as a member of a certain scale of numbers, formed according to the rule we use in forming the same, and that, according to that rule, which is a rule of operation, four is no other than the result which ensues from taking one and one and one and one together, that is, this operation, or compound of operations, has a certain result as related to the formation of the scale of numbers, and that result is identical with the result that ensues from the doubly compound operation of forming first one two, and then another two, and then lastly taking these two single twos together, and reading the result and giving it its name, according to the names we have before given to our primary scale.

When we make such an affirmation as that two and two make four, we at bottom asseverate, not with respect to objects, but with respect to our own mental operations; in the case stated with respect to the equivalence of the results of certain complexes of our own mental operations. Now, to say, or, with Stuart Mill, to propound, that at some epoch of time, or at some region of space, two and two might make three or five, is not merely to say or propound that at such time or place mental operation might work otherwise than it now does, for that might be, and still consistent results ensue. It is no less than to say or propound that then and there mental operation might exist that would be *inconsistent* in its results, that is, that would be confounding, which is again only to say, that such mental operation would give no *mental* result at all.

*A priori* certainty, rightly regarded, only involves the faith that the universe is a consistent one, a *reasonable* one; that while, as our experience, or our insight, or our presumptions, may influence us, we may accept or reject, without any logical sin, divers single doctrines, our liberty in general is limited, and we may not accept or reject them by pairs and in other arrays, but *must* often, out of such arrays, hold some doctrines as true and others as false, if we hold any as true or any as false. We cannot, say, hold a triangle to be both scalene and equiangular, nor the circumference of a circle to be just triple its diameter. When, being unsound as to our fundamental notions and doctrines, we yet insist on their truth by authority of that *naïve* intuition that is so unreliable, or by the authority of an incompetent logical faculty, or slovenly logical habits, it is not any *a priori* assurance that we manifest, it is only that false conceit that metaphysicism so generally fosters.

M. Mouret, in spite of his strong lucidity as to some very important points, and in spite of his frequent protests, has not, as it seems to me, wholly escaped from the meshes of metaphysicism. Not to mention other signs of this, his frequent use of

the notion "attribute" calls for notice. "Attribute" is the correlative of "substance" and has no proper sense apart from its correlative. It was the chief intent and import of the work of Berkeley and Hume, on whom M. Mouret so well relies, to abolish this notion of substance. We do not use either of these correlatives, unless it may be by inadvertence or in cases where there is no special call for precision, out of a desire to conform to the language understood by those whom we address. In our fashion of philosophising, one "thing" stands on just the same footing as another. They are all just so many mere "things" of equal original rank.

That "objective and abstract science" of "the sum total of the exterior objects of knowledge considered independent of their particular nature" is Relation-Lore, and because it was this science that I supposed M. Mouret at bottom to intend as his ideal of logic, I entitled my paper "Logic as Relation-Lore."

Since things, merely as so many somethings and nothing more, are the ultimate products of analysis, the science thereof, being the science of everything, (in virtue that everything must be at least a thing,) must be the true *scientia scientiarum*, applying in its proper scope, without exception, to everything that has been, or is now, or may possibly be.

It is, in the first place, to be observed that this science is mathematical. It not merely contains the sciences of number and order. The sciences of number and then of order lie at its roots. Pythagoras is said to have laid it down that "number was the first principle of all things." We should be glad to ascertain that that great master had in mind the science that M. Mouret forecasts as his ideal of logic. Order may be "heaven's first law," but in science number is prior to order. Such science of order as is extant takes its very nomenclature from the designations of number.

But, contemporaneous with number and order, relation-lore obtains, and all the essential characteristics of relations are here to be observed. If in such fundamental branches of science as those of number and order that notion of a relation that knows the same as appurtenant to a particular term and not as a betweenness, is imperatively required, then we may be sure that that same notion must universally obtain. This question is easily settled. Take the numerical relation of *A* to *B*; say that relation is two. What is it that is two? Is it anything else than *A*? Is it anything between *A* and *B*? In the same case *B* is in relation to *A*, that is, it is one-half (not two) of *A*. What is it that is one half, if not *B*, and *B* alone without any betweenness? What is it that is one-half but *B*, and what is it that is two but *A*?

Say again, that the relation of *A* to *B* is a relation of order, that is, say that *B* is third in order to *A*. So stated, the relation is not quite determinate, for *A* is also in the relation third in order to *B*, and each is in the relation *from* the other. Yet it is quite plain that *A* stands to *B* otherwise than *B* stands to *A*. We mark our feeling of this difference by saying that *B* is third in order *after* *A*, and that *A* is third in order *before* *B*. Now, what is it that is *after* *A* but *B*, and what is it that is

*before B* but *A*? Caution is requisite here, because, though not involved, or, at least, involved only in an incidental way, there is in reality a betweenness, viz.: the thing that occupies the order second. Then, too, if we were dealing with the orders first and second, instead of the orders first and third, our natural associations would tend to drag in the interval or quasi-interval that is usually present in any concrete instance of order. We can escape this error by reflecting that in the latter case the order, in the abstract consideration, is in no wise dependent upon this interval or quasi-interval. We could just as well take this interval or quasi-interval as itself one of the terms of the order. The relations would be the same in either case.

If that which is named *after* is between *A* and *B*, then by that same token that which is named *before* is there also, in which case there is this dilemma: Either the relation "between" *A* and *B* is compounded of contraries, or there are the two relations, *after* and *before*, one pertaining to *B* and the other to *A*.

I respectfully submit that when M. Mouret on proceeding to study the relation of inequality finds himself compelled to give two *senses* to his betweennesses, he virtually yields the whole matter now in issue. Since a *sense*, in the meaning of M. Mouret, is the result of a more ultimate analysis than is a relation, (as he understands the same,) and since all relations, (as he conceives them,) may be regarded either as *senses*, or as compounded of *senses*, it is hard to see any good reason for his habitudes in respect to the nature of those important entities.

### III. M. MOURET'S THEORY OF RELATIONS.

If I have justified the doctrine that I hold with respect to the nature of relations, it follows as a matter of course that M. Mouret labors under disadvantage in framing his theory thereof.

He tells us that his theory takes its true prompting and instruction, not from the axiom of symmetry, as I had supposed, but from the principle of Spencer. I can urge this in excuse, that of all the several maxims akin to it, the axiom of symmetry is the only one that bears any fruitful meaning. M. Mouret, very properly, as I think, insists on the constant recognition of the necessary relativity that must obtain as to all the objects of knowledge. He will have already seen by the foregoing that no one ought more strenuously to insist on such recognition than myself. Indeed, both he and myself are, by our fundamental doctrines, committed to the recognition that all the objects of knowledge are and must be interrelated; that any such case as that of any object of knowledge unrelated is wholly inadmissible, and this naturally, insuperably, and *unconditionally*. We do not evoke the relations by our conduct; they are there *pro re nata*. Now, I hardly know what to understand by an indefinite or by a constant relation. I can easily read into the maxims of Mr. Spencer and George Eliot, in each case, more than one intent, but for no intent that occurs to me can I perceive that either of these maxims are made of any considerable avail. Any two things have by the general case that allows of rela-

tivity at all a definite relation, in this, that they either coexist or they non-coexist, (one case of which non-coexistence is sequence). Just what rôle the definiteness or indefiniteness of the relations of either or both of them to a third thing may fulfil, either in supporting or in ascertaining either one of these definite relations, it is difficult for me to see. With regard to constancy; among all the relations that two things might bear to each other, it would be a singular case that would find them without any constant relation at all, so that again the rôle that the constancy or the inconstancy of the relations of either or both of them to a third thing might fulfil, either in supporting or in ascertaining the existence of an *unassigned* constant relation, is beyond my ability to state. Hence, to lay it down with gravity that "things that have a definite relation to the same thing have a definite relation to one another," or that "things that have a constant relation to the same thing have a constant relation to one another," is only to imply a dependence upon or a contingency upon that which in reality is altogether lacking, so far as we can see, in governing or in instructive efficacy.

The truth is, that after we have recognised the subsistence of universal relativity, it is precisely the ascertaining of the different kinds of relations and the ascertaining of the connexions of these different *kinds* of relations with one another that can alone benefit us to any considerable extent. This is not, as M. Mouret supposes, a matter of psychology, an ascertaining of that which constitutes "the subjective element," but an "objective and abstract" study of "the sum total of the exterior objects of knowledge," and at least in the earlier stages of this study it is very much facilitated by considering them "independent of their particular nature." Hence I must decidedly disapprove of the method of M. Mouret, in selecting a lot of concrete examples for study. It seems to me a useless and needless invitation to error.

I have no special fault to find with the three leading principles laid down by M. Mouret with respect to concepts, save, perhaps, in so far as he claims that the negative of a concept is by any necessity single. I must protest, however, that I cannot agree with him that these three leading principles "cover the entire subject." I do not even see that they are, in essence, new. He may have shown what is undoubtedly true, that many of the concepts of scientific order are composed of less complex elements, but I cannot assent to the proposition that these less complex elements, or even that the most simple thereof, are reducible to "states of consciousness" until I know better what is to be understood by the phrase "states of consciousness"; a phrase, I may add, that is very much overworked. A "state of consciousness" may be taken to mean the "form" expressed therein, or it may mean the various psychological effects, which, as I have before stated, I consider in themselves as both irreducible and valueless for the behests of both science and philosophy. In either case the solution claimed by M. Mouret is obnoxious to the criticism that consciousness grades off continuously into unconsciousness, and, although we may lay it down that every notion or relation ought under analysis of

adequate power to resolve without limit into other notions or relations, we may not say of any status that just emerges over the threshold of consciousness that its elements are primordial. Contrariwise we should expect and hold that our most simple notions and relations depend upon components that are not perceptible or that are sub-perceptible only. All this, however, is the instruction that the introspective method yields. The "objective and abstract" science above mentioned involves no such problems. I must also record my respectful dissent from the claim of M. Mouret that he has pointed out the order and conditions of the derivation of concepts, and that he has described all the conditions for the passage from the known to the unknown.

#### IV. MATHEMATICAL EQUALITY.

M. Mouret says in his foot-note to section (2) of the paper I criticised: "In the present essay I use the word mathematics to signify exclusively the science of numbers and of quantities, in technical terms the theory of numbers and of mathematical analysis," and his context shows that he expressly excluded geometry, mechanics, physics, chemistry, etc. Hence I took him to mean by "mathematical equality" numerical equality, at least in the main. The gist of what he says upon this branch of our subject in his reply may be comprised in his remark, that equality and inequality are correlative relations, which is entirely true, and in his claim that equality is logically prior to inequality, inequality being defined by equality. In my own paper I advanced an argument designed expressly to show that this was not the case, equality being defined by two correlative inequalities. I can only reiterate my former argument, which as yet remains unanswered. I may say here that I believe I am in accord with many distinguished logicians in holding that the only propositions that are unconditional in their signification are and must be negative in their form. The remark of Hegel that all determination is by negation is, I believe, well approved as a logical principle.

#### V. THE AXIOM OF SYMMETRY.

I cannot see that M. Mouret has justified the axiom of symmetry or in any wise parried the thrusts I gave it. Most of his arguments depend upon the validity of his view of the nature of relations. That axiom is stated in an unqualified way, and it asserts no less than that whenever or wherever, no matter how brief the instant or how contracted the region, any two things have the same symmetrical relation to a third thing, that then and there that same symmetrical relation exists between the first two things. Clearly, then, as it seems to me, it was only open to M. Mouret to show as to the instances that I cited, either that the axiom was fulfilled or that my instances were *not* cases of the conjoint existence of a like symmetrical relation between each of two things to a third thing. Now, what kind of an axiom is that, that when the case that it contemplates exists, is sometimes true and sometimes not true? The case of mutual friendship supposes that *A* and *C* are mutual friends, coincidently that *B* and *C* are also mutual friends. Suppose that this

state of affairs endures for an instant only, then if mutual friendship is a symmetrical relation, and if the axiom is valid, *A* and *B* must be mutual friends. I appealed to experience that such was often not the result, and while much that M. Mouret says in avoidance is very true, it does not as it seems to me at all meet the exigency of the case which is very simple, viz.: Does mutual friendship exist between *A* and *B* if it exists between *A* and *C* and at the same time between *B* and *C*? or on the other hand, Is mutual friendship a symmetrical relation?

The case of the distance of two points from a third is made totally irrelevant owing to the different views held by M. Mouret and myself as to the nature of relations. He looks upon a relation as a betweenness, and consequently a distance is to him only a single relation, while I regard the same as the conjunction of two convertible relations.

The case of the sun and two planets is avoided by M. Mouret by the denial that there is in that case any conjunction of relations of mutual equilibrium. He sees in that case only relations of mutual attraction. I cannot stop to dispute over the question of equilibrium. It is a relation that would require much time and space to demonstrate as existing in the case in question in every scientific sense. Instead of that I will take the case of a similar kind to that admitted by M. Mouret; viz., a case of mutual attraction. *A* and *B* are bodies charged with positive electricity, and *C* is a body charged with negative electricity. Hence between *A* and *C* there is a mutual attraction, and so is there also between *B* and *C*, but instead of *A* and *B* attracting one another as by the axiom of symmetry they should, they on the very contrary repel one another. The simple objective verity does not hold.

In order that M. Mouret may not think that I have disregarded his "axiom of the three senses" and what he has to say on its behalf, I make this mention. I must protest that this new axiom is in just as bad a plight as is the axiom of symmetry, but the already too great length of this paper forbids me to enter upon any discussion of the same.

In conclusion I wish to thank M. Mouret for his notice of my criticisms. If in the ardor of advocacy I have been betrayed into any remark that seems to him ungracious, I wish to blot it out and to assure him not formally but really of my distinguished regard.

FRANCIS C. RUSSELL.

## BOOK REVIEWS.

**NATURAL THEOLOGY.** The Gifford Lectures Delivered Before the University of Edinburgh in 1893. By Prof. Sir G. G. Stokes, Bart. London: Adam and Charles Black. Chicago: A. C. McClurg & Co. 1893. Pp. 272. Price, \$1.50.

The object of Lord Gifford in founding the course of lectures which goes by his name and which is now so widely known, was to promote, advance, teach, and diffuse the study of natural theology in the widest sense of that term, in other words, "The Knowledge of God, the Infinite, the All, the First and Only Cause, the One and the Sole Substance, the Sole Being, the Sole Reality, and the Sole Existence, "the Knowledge of His Nature and Attributes, the Knowledge of the Relations which men and the whole universe bear to Him, the Knowledge of the Nature and Foundation of Ethics or Morals, and of all Obligations and Duties thence arising." Our readers are probably already acquainted with some of these lectures, all of which we believe have appeared in book-form, and especially with those of Prof. Max Müller, reports of which were published in *The Open Court* several years ago. The last course was delivered by Prof. Sir G. G. Stokes, a physical scientist of great ability, whose work, especially in optics, is celebrated. Unquestionably the views which an eminent practical scientist holds upon the question of Natural Theology should be of great interest, as characteristic of the thought of our time; and in Professor Stokes's case this interest is unusually heightened since his views seem to run counter to the drift of speculation now generally prevailing among physicists.

Professor Stokes's lectures (this is the second course) are divided into two parts: the six lectures which form the first part deal with scientific subjects, in so far as these support the original thesis of Lord Gifford to which the lecturer is limited; the remaining four lectures refer to distinctively Christian doctrines, in so far as these agree with the scheme of natural theology. In the first lecture, Professor Stokes takes up the history of the undulatory theory of light. He shows how we were led to this theory by other natural analogies familiar to us, and how we were gradually obliged to change the suppositions which we originally made and ultimately to assume the existence of certain properties of the ether which we do not meet with in the ordinary course of our experience of things, and which are in some

respects even mysterious; in other words, the properties of the luminiferous ether turned out to be greatly different from what we first thought they were. The conclusion from this is, that if in this physical investigation we had displayed the same stubbornness which we now exhibit in theological [and spiritualistic] investigations, we should have missed great discoveries—discoveries which are now accepted as facts of actual, legitimate science; and consequently that we are much more likely to make mistakes and miss things highly important to our welfare if, relying upon our knowledge of the laws of nature, we summarily dismiss the evidence of asserted facts, which, if true, are of a character to lie altogether outside of the ordinary course of nature. This point excellently characterises the expositions of the lecturer. It leads him to a notion of the supernatural or of events which do not belong to the ordinary familiar course of nature (although the argument really involves only the assumption of things unknown); and to the belief that the instantaneous communication of intelligence from one part of the universe to another is *possible* (Lecture II). It is not necessary to say that Professor Stokes also accepts as evidence of design the adaptedness of organs to their purposes (Lectures III and IV), and that though he accepts evolutionary processes (Lecture V) he yet contends that there is no incompatibility between evolutionary processes and the superposition thereto of occasional creative acts for special purposes (Lecture VI). With respect to the last four lectures we need only mention that the deficiencies which natural theology leaves in the scheme of divine moral government are, in the lecturer's view, in great part supplied by Christianity. It is Professor Stokes's belief that any divorce between natural theology and revealed religion is, in whichever aspect we look at it, to be deprecated.

The point which will claim most the attention of the philosopher or rather epistemologist in Professor Stokes's position is that expounded in the first lecture, namely, to what extent our holding fast to the received truths and ideas of science and to the facts with which we are familiar, will impede the further investigation of nature. His example from the theory of light is a good one, and might be supplemented by a score of others from all branches of science and art. But is Professor Stokes's analysis of this example correct?

The mysterious properties to which Professor Stokes refers are the facts that if the luminiferous ether exists it must at the same time behave like an elastic solid in resisting the gliding of one portion over another, and yet like a fluid in letting bodies pass freely through it. That it exists, Professor Stokes has no doubt. But the existence of nondescript things and their explanation are different matters. Certainly, the discovery of strange things is allowable, but their *explanation* is something which must be effected with reference to known, *familiar* things. This is the case with the above-mentioned property of the ether. It is strange and unfamiliar because it contradicts our ordinary experience, and it will remain such until it is reconciled with the latter. Of course, in this argument it is assumed that this property of the ether is a fact. But epistemologically it is not a fact, but the logical out-

come of an *hypothesis* which we have formed to facilitate our *view* of facts. Such hypotheses, if truly scientific and definitive, must follow what is called the principle of continuity; that is, they must attribute to the hypothetical entities they assume, such properties, and such only, as are not contradicted by our experience of "large" bodies. Perhaps this theory of research is wrong; but it is at least the one which has led to the greatest discoveries—even to the wave-theory of light. The conclusion of it is, not that the nondescript property of the ether referred to is a "great discovery," but rather that there is a very important problem presented here in connexion with the wave-theory of light, which if it cannot be explained by *reference to familiar established facts*, will ultimately render necessary a revision of the undulatory theory of light, in some such sense as took place when transverse vibrations were substituted for longitudinal.

But whether the author's analysis of the point in question is correct or not, the principle which it is used to establish, could be independently affirmed. If it is valid, then the whole history of science has been in vain. After all our struggles we have not really attained a scientific criterion of truth, and scientific criticism is stultified. Professor Stokes's solution of the problem, How shall research be conducted, gives free scope to the wildest vagaries of the spiritualist, and to the ignorant and incompetent of all classes, while it discredits the judgment of the trained critical inquirer and gives to every one, under the pretext of prejudice, the right to impugn the validity of scientific results.

T. J. McCORMACK.

ASPECTS OF THEISM. By *William Knight, LL. D.*, Professor of Moral Philosophy in the University of St. Andrews. London and New York: Macmillan & Co. 1893. Price, \$2.25.

The twelve lectures which constitute this work were delivered at Dundee in 1870, at Salisbury in 1890, and at London in 1891. Its main conclusions were published in 1879 in Professor Knight's "Studies in Philosophy and Literature." The feature of the book is its statement that Theism must be treated as a problem of philosophy. No theory of things, the author justly argues, whether theological, scientific, or historical, which dispenses with philosophy, can have either an adequate basis or a root of endurance. The style of Professor Knight's work is remarkably clear and elegant—an excellence which is surpassed only by the outspokenness of its opinions.

In Professor Knight's view, though the ontological, cosmological, and teleological arguments all possess a germ of truth, each in itself is insufficient. His own argument or solution combines the points of view of *all* thought on this subject; it represents "the theistic view of the Universe as a focus at which the conclusions of "Speculative Philosophy, Science, Poetry, Art, History, and Religion meet—a "focus at which the personal and the impersonal view of the ultimate mystery combine." His argument is full of beauty and charm. But it is more a *feeling* than an argument, and to appreciate fully its strength one must have personal experience

of the moods and sentiments out of which it has grown. That is to say, one might convince oneself by it after one had reached the conviction, but hardly another, who was without it.

Remarking that Professor Knight's favorite term for God is "The Infinite," his argument might be briefly, but brokenly, restated as follows. The proofs of Theism are not philosophically recondite. They do not require any great or original speculative power to comprehend them. They are as patent to the "hewer of wood and the drawer of water" as to the philosopher; so much so in fact that intuitive evidence, above and beyond all other kinds of evidence, is "the impregnable fortress of Theism." He is best fitted for knowledge of God who brings to his task a heart that "watches and receives." There is going on in Nature an incessant apocalypse of the Infinite, which is a real disclosure of God as constant as the sunrise, in the apprehension of which the basis of Theism is laid. We might call this means of knowledge intellectual and moral second-sight. Poets [and, we might add, mystics] possess it in the highest degree. Instead of a conclusion, and this is the very core of Professor Knight's argument, Theism is a *premise* which has other proof than the evidence of ratiocination, and on which the human race carries about with it a vast and many-sided conviction, of which it knows not the evidence, but which is the outcome of momentary illuminations. The Ontologist and the Teleologist, in their pictures of God, unconsciously draw their own portraits; but the Intuitionalist, in his picture of God, only draws the image which he sees and which is revealed to him not as a "form of his mind's own throwing," nor as one due to the penetration of his Finite Spirit, but as an act of "gracious condescension" on the part of the Infinite. Further, and supplementarily, the evidence on which our conviction rests is cumulative. No one individual sees all of God; each sees only a part. Our idea of God is a *heritage of the human race*, to which all nations and all philosophies have contributed their quota. It may be added, also supplementarily, that although no limitations are admissible to circumscribe this idea, yet any epithet may be applied to the Infinite which helps us to understand it, and though we may now describe it as "It" and again as "Thou," yet, since we cannot worship an Impersonal or Absolute Being, we must put ourselves in intelligible relation with the Infinite and regard it not as an abstract essence, but as a real thing, which is best done by conjoining with it the notion of personality; in other words, "Thou" or "He" is preferable to "It."

Philosophically, the Infinite or God of Professor Knight assumes many forms, is in fact everything but the Finite, forming a kind of enlightened Pantheism. In so far as it exhibits itself as a result of the analysis of physical ideas it is a supreme Principle, Force, Essence, Energy, Being, the One beyond the Many, the Essence beneath Appearance, Substance within Phenomena, the Absolute beyond the relative. And as the supreme idea of force is will, this principle is a self-conscious Mind and Will. In this climax of research Metaphysics and Theism unite, and the result is God.

Professor Knight's idea seems to be that the Infinite or God is everything which exists, which is not the Finite, and, we may add, since he is a professed Dualist, it is also a few things which do not exist. The idea of the Infinite in his presentation, regarded as the correlative of the Finite, is the outcome of the doctrine of the relativity of knowledge. From this relation it follows, according to Professor Knight's thinking, that our notion of the Infinite is just as positive as our notion of the Finite; though it is not given us with the luminous clearness that its correlative is, nevertheless it is a real term and a real relation.

There are two kinds of metaphysics. The one which imports its abstract notions into reality, and the other which derives its abstract notions from reality. Professor Knight's reasoning is an instance of the former. He says, the Finite implies the Infinite, as the centre does a circumference, etc., etc. This is true as a *term of thought*, but it is not true as a term of reality. The Infinite as a positive existence follows no more from its correlative "Finite," than the truth of the converse of a logical or geometrical proposition follows from the truth of the proposition. The idea of our real space of three dimensions implies the idea of a space of four or  $n$  dimensions, but not its existence. Again we may form some notion of what is meant when we speak of infinite magnitude, but what is infinite *quality*? As a fact, we derive our notion of the Infinite from finite things; we have formed it as a help of thought; it is absolutely a negative notion. The fact of its being a correlative of the notion of Finite proves nothing; its nature cannot be deduced from a metaphysical relation, but must be deduced from the facts on the basis of which it was constructed. What "hewer of wood or drawer of water" has a clear notion of the Infinite as a necessity of thought! It is essentially a philosophical, theological, and mathematical idea. In the first two branches it may mean almost anything. In the last only has it been accurately defined and made use of as a real and serviceable idea.

The dualism of man and nature which Professor Knight upholds, when analysed, really indicates the separation of the notions of Finite and Infinite. Suppose, for instance, and the supposition is as allowable as the allegory of personality, that nature, including man, were a great machine in which the motion of one part determined the motions of all the other parts, so that the motion of a part of my brain determined the universe. Would there then be an Infinite? I would be God, man, and universe in one. This is an "idealistic" view. But the difficulty is, that the motions of my brain, materially, or spiritually my ideas, my volitions, do not determine the other parts of the universe. They only determine the parts of it which are included within the circumscription of what is termed my self or ego. Beyond it rises the non-ego, the (by me) undetermined part, the universe, the world, God. This undetermined part, compared with "my" determinable part, really is infinite. But why should we view it under the notions of personality, will, etc. One remarkable part of this phase of existence, mind, nature, or whatever it may be called, is, that its conduct is remarkably stubborn and uniform. Stones fall to the ground

fluids seek their level, bodies grow cold, never hot, of themselves. If *I* determined these events, they would often take place differently. Consequently, if there is a mind or will which directs the universe, it is a remarkably single-minded one, and a rigid one, and so much higher than our feeble and wavering will that it would be much better if we should compare ourselves to it rather than make it an image of ourselves.

It only remains to be said that Professor Knight's solution of the problem of the universe is also a henistic one, in the sense in which that word was explained in the last *Monist*. The Infinite or God is a great sea of imperishable, invisible essence, in which man and nature, "all the choir of heaven and the furniture of the earth," float.

μκρκ.

THE EVANSTON COLLOQUIUM. LECTURES ON MATHEMATICS. By Prof. Felix Klein.

Reported by Alexander Ziwet. New York and London: Macmillan & Co. 1894. Pp. 109. Price, \$1.50.

One of the most prominent mathematicians who attended the recent Congress of Mathematics at Chicago was Prof. Felix Klein, of the University of Göttingen, Commissioner of the German University Exhibit at the Columbian Exposition. After the adjournment of the Congress, Professor Klein, by special request, held a colloquium on mathematics in the Northwestern University, at Evanston, Illinois. The meetings lasted from August 28 until September 9, during which interval Professor Klein delivered twelve lectures. As the lectures were delivered to members of the Mathematical Congress, they are somewhat in the nature of a supplement to the proceedings of the Congress, which will explain the incompleteness of their character. At the end of the lectures a translation is printed of the historical sketch, "Mathematics at the German Universities," contributed by Professor Klein to the great two-volume work of the German Exhibit, *Die deutschen Universitäten*, mention of which is made in *The Monist* of October, 1893. This sketch brings the subject down to 1870; it is the object of the Colloquium, therefore, to pass in review some of the principal phases of the most recent development of mathematical thought in Germany.

The first six lectures are largely geometrical in character. Lecture I is devoted to Clebsch, whose most valuable work is said to be his generalisation of the whole theory of Abelian integrals to a theory of algebraic functions with several variables; Lectures II and III, to Sophus Lie, whose forte is said to be the application of geometrical intuition to questions of analysis, best expressed in his earliest memoirs. Lecture IV is devoted to "The Real Shape of Algebraic Curves and Surfaces." Professor Klein sets up three chief types of mathematicians, namely: logicians, formalists, and intuitionists. He classes himself among the third and first. The intuitionist feature of his mind is exhibited in the present lecture, to the subject of which he has personally contributed much. The characteristics of the geometrical method as discussed in this lecture are that they give an actual

mental image of the configuration under discussion, a feature which Professor Klein considers the most essential in all true geometry. Lecture V is on "The Theory of Functions and Geometry," where an example is given of the general discussion of complex functions by means of geometry.

Lecture VI, "On the Mathematical Character of Space-Intuition, and the Relation of Pure Mathematics to the Applied Sciences," is that of greatest interest to the philosopher and teacher. Professor Klein refers here to his distinction of *naïve* and *refined* geometrical intuition, the first of which is active in all periods of genesis, and the latter in all periods of criticism. For example, the period of Euclid was that of the refined intuition; for his methods are not methods of discovery, but simply methods of confirmation. He applies this distinction to modern mathematical disciplines, and also gives us some excellent remarks on the theory of knowledge and on methods of mathematical instruction. The problem, also, whether the study of mathematics should have wholly utilitarian ends in view is here touched upon, as it is also in Lecture XII. Professor Klein is conscious "of a growing danger in the higher educational system of Germany,—the danger of a separation between abstract mathematical science and its scientific and technical applications." He says, such a separation is only to be deplored; "for it would necessarily be followed by shallowness on the side of the applied sciences, and by isolation on the part of pure mathematics." A comparison of the relative fruitfulness of the mathematics of the eighteenth century, which was developed almost wholly in connexion with practical problems, with that of the nineteenth, will strengthen this view. Still, Professor Klein requests that his remarks be not interpreted as in any way prejudicial to the cultivation of mathematics as a purely disciplinary, abstract science having ends in itself. It may be interesting to our readers to know that Professor Klein recommends Kiepert's new edition (the sixth) of Stegemann's text-book of the Differential and Integral Calculus\* as the best work for beginners; and that he regards the second edition of Jordan's *Cours d'analyse* as marked by too much refinement in the laying of the foundations of the calculus to be placed in the hands of a beginner, although for professional mathematicians works like Jordan's are indispensable.

Lecture VII treats of "The Transcendency of the numbers  $e$  and  $\pi$ ," of Hermite and Lindemann's investigations, with which the readers of *The Monist* are familiar (See *The Monist*, Vol. I, No. 2, p. 227). Lecture VIII treats of "Ideal Numbers," where elementary geometrical interpretations of binary algebraical forms by means of line-lattices, point-lattices, etc., are given. Lecture IX treats of "The Solution of Higher Algebraic Equations"; Lecture X of "Some Recent Advances in Hyperelliptic and Abelian Functions"; Lecture XI of "The Most Recent Researches in Non-Euclidean Geometry." Lecture XII is entitled "The Study of Mathematics at Göttingen"; and as Professor Klein's Göttingen lectures are of spe-

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\* *Grundriss der Differential- und Integral-Rechnung*, Hannover: Helwing. 1892.

cial interest to American students we shall quote here a statement in connexion with American students to which Professor Klein wishes the widest publicity to be given:

"It frequently happens at Göttingen, and probably at other German universities as well, that American students desire to take the higher courses when their preparation is entirely inadequate for such work. A student having nothing but an elementary knowledge of the differential and integral calculus, usually coupled with hardly a moderate familiarity with the German language, makes a decided mistake in attempting to attend my advanced lectures. If he comes to Göttingen with such a preparation (or, rather, the lack of it), he may, of course, enter the more elementary courses offered at our university; but this is generally not the object of his coming. Would he not do better to spend first a year or two in one of the larger American universities? Here he would find more readily the transition to specialised studies, and might, at the same time, arrive at a clearer judgment of his own mathematical ability; this would save him from the severe disappointment that might result from his going to Germany."

The spirit of these colloquia make up somewhat for their incompleteness. It would seem as if most of the hearers were quondam students of Professor Klein, as his attitude and tone is that of an old teacher.

T. J. McC.

A HISTORY OF PHILOSOPHY, With Especial Reference to the Formation and Development of Its Problems and Conceptions. By Dr. W. Windelband. Authorised translation by James H. Tufts, Ph. D. New York and London: Macmillan & Co. 1893. Pp. 640. Price \$5.00.

There could be no question of the necessity of a translation of Dr. Windelband's "History of Philosophy." The work, which appeared as recently as 1891, met with a very favorable reception in Europe, and possesses many excellences by which it may be favorably compared with the other standard text-books upon this subject. It is not a mechanical re-elaboration of the subject-matter of the history of philosophy, but is based upon many new commendable points of view, both of form and conception. As distinguished from most other manuals of this subject, it gives little space to biographical and bibliographical details, but devotes the main part of its expositions to the presentation of the motives under which our notions of the universe and of life have been developed. This excellence of form has been enhanced by the typographical execution of the translated work, where the matter is so arranged that the student has every advantage that mechanical means can supply, among which we must not omit to notice a good index.

If the reader of this volume is disappointed in some respects, (though there are as many counter-aspects in which he will be pleased,) his disappointment will spring from reasons which the author well defends. Little emphasis has been placed upon the individuality of thinkers, and we miss that inspiration which always attaches itself to the activities of persons. It is what the Germans call a "scientific" exposition, and we may also say it is an *academical* one. This characteristic point of

view of the work will explain the severe criticism which Dr. Windelband makes of books like Lewes's "History of Philosophy," and also of works of the stripe of Dühring's.\* All is presented under the point of view of development, and not under that of the individual thinkers. A quotation will suffice to characterise Dr. Windelband's idea.

" Before all else the decisive question is : what has yielded a contribution to " the development of man's conception of the universe and estimate of life ? In the " history of philosophy those structures of thought are the objects of study which " have maintained themselves permanent and living as forms of apprehension and " norms of judgment, and in which the abiding inner structure of the human mind " has thus come to clear recognition. This is then the standard, according to which " alone we can then decide also which among the doctrines of the philosophers— " concerning, as they often do, so many various things—are to be regarded as prop- " erly philosophical, and which, on the other hand, are to be excluded from the his- " tory of philosophy. Investigation of the sources has of course the duty of gather- " ing carefully and completely all the doctrines of philosophers, and so of affording " all the material for explaining their genesis, whether from their logical content, or " from the history of civilisation, or from psychological grounds ; but the purpose " of this laborious work is yet only this, that the philosophically indifferent may be " ultimately recognised as such, and the ballast then thrown overboard. It is espe- " cially true that this point of view must essentially determine selection and presen- " tation of material in a *text-book*, which is not to give the investigation itself, but " to gather up its results."

Little need be said upon this excellent conception of the History of Philosophy which entirely harmonises with the spirit of modern methods of instruction. The translation appears to be in every respect a faithful and painstaking one. No one who has not done such work can be aware of the difficulties which it presents. As the translator confesses, his success has been an unequal one. And whilst there are some passages which are very idiomatically and smoothly rendered, there are others which bear the marks of a too close and stilted adherence to the original, especially in the rendering of technical terms which the Germans multiply beyond all reasonable limit in their works. The translator has added to the bibliographical lists some English and American works which will be of help to the student, who upon the whole, we think, will find Dr. Windelband's work very serviceable. *μκρκ.*

GRUNDZÜGE DER PHYSIOLOGISCHEN PSYCHOLOGIE. By *Wilhelm Wundt*. Vol II. Leipzig : Wilhelm Engelmann. 1893. Pp. 684.

Shortly after the appearance of the first volume of the fourth edition of Wundt's "Grundzüge der physiologischen Psychologie," we receive the second. This book

\* By the way, on page 17, foot-note, Dühring's Christian name is given as "Ed." but should be Eugen. This instructive and versatile philosopher, we regret to say, is also classified on page 630 as a "side phenomenon" along with Hermes, Bolzano, Guenther, and Rosenkrantz.

has acquired the rank of a standard work of reference on this subject, and is too well known to need here a detailed statement of its methods and character. Like all Wundt's works, it is encyclopaedic in character, and treats fully of the various extensions of psychological science. Since the appearance of the first edition of the work in 1874, wonderful progress has been made in psychology, and even during the interval which has elapsed between the third and the fourth editions, many changes have been wrought and many new investigations undertaken. Consequently, the present edition is much enlarged, and to give the reader some idea of how great the augmentations have been we will state that while the second volume of the second edition contained but 464 pages, this, the second volume of the fourth edition, contains 684 pages. This increase in size is greatly due to the fact that since that time psychology has developed methods of its own, and perfected technical means of investigation which needed to be explained. Readers will find in Wundt's work full descriptions of all these new methods and instruments, and in this respect may safely rely upon the treatise as the best *Gesammeltractat* which exists. *μκρ.*

**STUDIES FROM THE YALE PSYCHOLOGICAL LABORATORY.** Edited by *Edward W. Scripture*, Ph. D., Instructor in Experimental Psychology. 1892-1893. New Haven, Conn.: Yale University.

These studies comprise the fruits of the first year's activity of the Yale College Psychological Laboratory. The monographs which the publication contains are: "Investigations in reaction-time and attention," by C. B. Bliss, Ph. D.; "On monocular accommodation-time," by C. E. Seashore; "On the relation of the reaction-time to variations in intensity and pitch of the stimulus," by M. D. Slattery, M. D.; "Experiments on the musical sensitiveness of school-children," by J. A. Gilbert; "A new reaction-key and the time of voluntary movement," by E. W. Scripture and John M. Moore; "Drawing a straight line; a study in experimental didactics," by E. W. Scripture and C. S. Lyman; "Some new psychological apparatus," by E. W. Scripture. The experiments bear the marks of very careful work and are elaborately executed. Descriptions of new psychological apparatus are also included in the volume. *μκρ.*

**SOME LIGHTS OF SCIENCE ON THE FAITH.** Eight Lectures Preached Before the University of Oxford in the Year 1892, on the Foundation of the late Rev. John Bampton, M.A., Canon of Salisbury. By *Alfred Barry*, D.D., D.C.L., Canon of Windsor, Late Primate of Australia. London and New York: Longmans, Green, & Co. 1892.

The character of this work may be collected from the restrictions set forth in the following excerpt from Canon Bampton's will, made to provide for the endowment of eight Divinity Lecture Sermons to be given yearly at St. Mary's in Oxford

"I direct and appoint that the eight Divinity Lecture Sermons shall be preached upon either of the following Subjects—to confirm and establish the Christian Faith, and to confute all heretics and schismatics—upon the divine authority of

"the holy Scriptures—upon the authority of the writings of the primitive Fathers, "as to the faith and practice of the primitive Church—upon the Divinity of our "Lord and Saviour Jesus Christ—upon the Divinity of the Holy Ghost—upon the 'articles of the Christian Faith, as comprehended in the Apostles' and Nicene Creed."

The lectures embody an attempt "to take some general view of the present relation of Science in its largest sense to the Christian Faith; as illustrated by examples of its bearing, confirmatory, elucidatory, or critical, on the substance of the Creed of Christendom." The author is inclined to a broad optimism on the subject of the reconciliation of science and religion, which, though seeing difficulties, yet sees, or trusts to see, through them. Science, Dr. Barry thinks, is growing more and more alive to the need of correlating its special developments in some large philosophy of Being, and is showing an inclination to acknowledge that the moral insight of the soul is a co-ordinate function with purely intellectual research in discovering the inner secret of that philosophy; while it is also deeply sensible that the search necessarily brings us into the presence of mystery, and forces upon us the alternative of Agnosticism or Faith. The latter alternative is the one for which Dr. Barry contends. The author sets up a "Christian theory of knowledge." The function of science is the discovery of law. And law (this must be pondered) is that which leads to Christ. "The law was our school-master to bring us to Christ, that we may be justified by faith." (Gal. iii, 24.) Why the discovery of law (science) should lead to Christ is stated in some such sentences as this: "We believe that the "Living God, who is Power, Wisdom, Righteousness, Love, has revealed Himself "to His creatures, and that this Revelation is *perfected* [italics are ours] in the "Lord Jesus Christ."

The purpose of all knowledge, or science, thus, is theology, which, unquestionably, is a true doctrine, and philosophically sound, provided we accept the theology which science leads to and do not lead science to the theology which we accept. In this latter sense Dr. Barry's work is strictly scientific, as may be gathered from the fact that he accepts literally the miracles of the New Testament, in the very teeth of what science, i. e. theology, says.

Christian thinkers who are inclined to literalism, will find a variety of new forms of argument, well supporting their position, in this work, which, if we except the technical meanings, with which words of ordinary signification are endowed—a characteristic of theologians—is written in a clear and forcible style and in a profoundly religious spirit. In a mechanical and typographical point of view the work is irreproachable.

μκpk.

PRINCIPLES OF POLITICAL ECONOMY. By *J. Shield Nicholson*, M. A., Professor of Political Economy in the University of Edinburgh. New York: Macmillan & Co. 1893. Pp. 434. Price \$3.00.

This is a new book, and therein lies much of its value. The author of it had for his instruction all the authorities that preceded him, their precepts, maxims,

reasons, and conclusions. In addition to that, he had before him all the latest experiments and facts that contradict the "theories" or prove them. As a teacher of political economy in a great university he has been compelled to study the science well. Those who agree with him will find in this book additional reasons for their faith, and those who differ from him in opinion will find good mental exercise in refuting his argument. As he remarks in his Introduction, "the attention which has recently been bestowed upon economic history, as will be shown by numerous examples in this work, has led to important modifications of previously accepted theories."

In this work Professor Nicholson explains the principles of political economy in their application to Land, Labor, Wages, Capital, Rent, and all the other subdivisions of the science in language easy to understand, and this is a great merit in a treatise on political economy. The comparison of principles is admirably made, and the illustrations of their practical results drawn from centuries of history are full of information. How far those principles are sound, or in harmony with one another it is for the reader to say. Enough that the principles are there.

The principles of physical science and of moral science are absolute, but not so the political or economic sciences except when they come within the domain of ethics or mathematics. The "laws" of political economy are full of implied provisos and exceptions growing out of artificial and accidental conditions. For instance, Professor Nicholson confidently says, "To assert that successive issues of inconvertible paper, other things remaining the same, will lead to an inflation of prices, is as true as to say that successive applications of heat will expand metals." In that form the statement is true, but many qualifications lie concealed in the proviso "other things remaining the same." It all depends upon the control the seller has over wares. The merchant can raise his prices according to the expansion of the currency, but the man who sells his labor must wait a long time before his wages will rise in proportion to the inflation of the currency in which they are paid. Professor Nicholson's book is valuable, not only for the manner in which it explains the principles of political economy, but also for the historical information it contains.

M. M. T.

UEBER DIE GEWISSEIT DES ALLGEMEINEN. Vortrag gehalten in der Philosophischen Gesellschaft zu Berlin. By Dr. A. Von Heydebreck. Leipsic: C. E. M. Pfeffer. 1893.

The author bases the certainty of formal truth, such as that contained in the formula twice two is four, on the impossibility of really *thinking* this process differently. All different thinking of this process, for example, twice two is five, is not a real thinking of the process, but an arbitrary statement of a different process which we do not *think* but only postulate. The universality of this truth, that is, its necessity in the minds of all thinking subjects, is founded on a similar argument namely, that any thinking of this process, by other individuals, which yields a dif-

ferent result, is not a thinking of the process in question but of a different process. The author contends that the facts of consciousness are the sole ultimate data for investigations of formal truth, and that the help of empiricism in the solution of these problems is, as a matter of principle, to be rejected.

μκρ.

DER MODERNE MENSCH. Versuche über Lebensführung. By *B. Carneri*. Third Edition. Bonn: Emil Strauss. 1893.

Our readers will find a somewhat detailed review of this little book of Mr. Carneri's in Vol. I, No. 4, of *The Monist*, page 607. It has now reached its third edition, and has assumed a dress which is in perfect keeping with the beauty and simplicity of its precepts. We know of few works which offer so much ethical food, in so sound and palatable a form.

μκρ.

IL ROMANZO DI UN DELINQUENTE NATO. By *A. G. Bianchi*. German Translation. Berlin: Alfred Fried's Company.

This "Romance of a Born Criminal," a German translation of which has just appeared, is a practical exemplification of Lombroso's theory of criminology, written not by Bianchi, whose name appears on the title-page, but by a real criminal, Antonio M. . . . ., now serving a term of sixteen years in an Italian prison for attempted murder. The criminal's real name is withheld out of regard for his family.

It is a remarkable work; and as Antonio M.'s list of crimes is a long one, his autobiography may be fairly said to be the product of the pen of one who is a perfect embodiment of Lombroso's theories. Despite a very defective education, the author frequently discovers high poetical and literary endowments, so that Bianchi could well write of him: "If he had had the opportunities of an education he would certainly take a place by the side of many of our contemporary writers." The impression of the work is augmented when we find in this "*document humain*," as Bianchi calls it, or rather in this criminal soul, traces of a genuine trust in God and a clearly marked mysticism. Here we find well portrayed that want of capacity of adaptation which Nordau speaks of, and also the same "*descants on virtue and honor, patience and humility*," that Nordau indicates. This criminal himself is not to blame for the "*misfortunes*" that have overtaken him, but the external world; his crimes are his fate; personally, he always remains in the path of virtue. He sets himself up—this is the purpose of his biography—as a model for his little son Francesco. "Learn from me how to be a man; learn how to suffer without complaining, and to direct thy steps toward the good, the beautiful, and the noble."

Τκ.

DER VERBRECHER IN ANTHROPOLOGISCHER BEZIEHUNG. By *Dr. A. Bähr*. Leipzig: Georg Thieme. 1893.

Although the work just above reviewed is intended as a practical corroboration of Lombroso's doctrines and is regarded by many as an important confirmation of the correctness of his ideas, it must be acknowledged that the general tendency of

present scientific thought is not to accept unqualifiedly Lombroso's main thesis. First, in his work "Crime and Its Causes," and recently in an essay in *Mind*, Morrison has strenuously combated Lombroso's doctrines. The writings of Kurella, which have been mentioned in the German correspondence of previous numbers of *The Monist*, are also on the side of the opposition. So, also, V. Magnan, whose lectures on psychiatry have been recently reproduced in German by P. F. Möbius, (Leipsic: Georg Thieme,) is inclined to qualify Lombroso's position, attributing to the so-called signs of degeneracy only a subordinate importance and maintaining that they are inadequate for the establishment of a type. Finally, it is the expressed purpose of the author of the present voluminous work, Dr. A. Bähr, Chief Physician at the Penitentiary at Plötzensee, to controvert *in toto* the theories of Lombroso.

In the first part of his book, Bähr treats of the physical, and in the second part, of the mental constitution of the criminal, basing his discussions on a long and varied experience, and exhibiting a very extensive knowledge of the literature of the subject. In fact, the reader is placed in this book *au courant* with all that relates to the history and present state of this question. Bähr has only words of praise for Lombroso's great zeal and for the stimulus which has proceeded from his work; but to the positive results of his activities he is absolutely opposed. For example, he says at the close of the chapter on tattooing: "Tattooing stands in no causal connexion whatsoever with atavism, and in much less a degree with criminality. For it appears among criminals solely in consequence of the peculiar character of their conditions of life and their social environment. It cannot be regarded as a sign of criminal tendencies, so long as countless good and honest men exist who are also tattooed." In the third part of the book, which treats of the "born criminal," we read: "We certainly do not go too far when we deny absolutely the existence of a criminal type in an anthropological sense; such a hypothesis lacks every foundation of scientific proof." Bähr goes greatly into details in his discussion of Lombroso's pet idea that both in physical and in mental respects atavism is the key to the mind of the habitual criminal. There is no question but that Bähr's work, which is not only intended for physicians, psychologists, and scientists, but also for the educated lay public, will give rise to much discussion. But it is a question of doubt whether the prophecy of Dr. Derenburg recently made in the Berlin *Tageblatt* will be realised, that Lombroso and his school will find in the communications and discussions of A. Bähr rather a confirmation than a refutation of their doctrines. Tk.

## PERIODICALS.

### THE PSYCHOLOGICAL REVIEW. VOL. I. NO. 1 and 2.

PRESIDENT'S ADDRESS BEFORE THE NEW YORK MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION. By *George Trumbull Ladd*.—THE CASE OF JOHN BUNYAN. I. By *Josiah Royce*.—STUDIES FROM THE HARVARD PSYCHOLOGICAL LABORATORY. I. By *Hugo Münsterberg*.—SHORTER CONTRIBUTIONS.

THE PSYCHOLOGICAL STANDPOINT. By *George Stuart Fullerton*.—THE CASE OF JOHN BUNYAN II. By *Josiah Royce*.—COMMUNITY AND ASSOCIATION OF IDEAS: A STATISTICAL STUDY. By *Joseph Jastrow*.—REACTION-TIMES AND THE VELOCITY OF THE NERVOUS IMPULSE. *Charles S. Dolley* and *J. McKeen Cattell*. DISCUSSIONS, ETC.—(New York and London: Macmillan & Co.)

We are glad to welcome into the field of technical literature so promising a periodical as *The Psychological Review*. The *Review* is edited by Prof. J. McKeen Cattell of Columbia College and Prof. J. Mark Baldwin of Princeton University, both of whom are well-known workers in the psychological field. Such eminent writers as Alfred Binet, John Dewey, H. H. Donaldson, G. S. Fullerton, William James, G. T. Ladd, Hugo Münsterberg, M. Allen Starr, Carl Stumpf, and James Sully have promised to contribute, and there is every reason to suppose that the new *Review* will be thoroughly representative. Its external dress is highly tasteful. We wish it all success and hope it will be patronised by readers of *The Monist* who are interested in the more special questions of psychology.

### MIND. NEW SERIES, No. 9.

HEGELIANISM AND ITS CRITICS. By *Prof. A. Seth*.—IMITATION: A CHAPTER IN THE NATURAL HISTORY OF CONSCIOUSNESS. By *Prof. J. Mark Baldwin*.—REFLEXIONS SUGGESTED BY PSYCHO-PHYSICAL MATERIALISM. By *Prof. H. Laurie*.—PROF. JAMES'S THEORY OF EMOTION. By *D. Irons*.—DISCUSSIONS, ETC. (London and Edinburgh: Williams & Norgate.)

Prof. Andrew Seth replies to the articles of Professor Jones, published in previous numbers, in criticism of Professor Seth's articles in *The Philosophical Review*. The article contains some excellent comments on epistemology.

Prof. J. Mark Baldwin gives us in the same number a good summary of his work *Mental Development in the Child and the Race*, soon to be published by Macmillan & Company. This work will embody the results of Professor Baldwin's researches into child-psychology, recently conducted with his own children, notes of which have been published in the various periodicals.

## THE PHILOSOPHICAL REVIEW. Vol. III. No. 1.

KANT'S THIRD ANTINOMY. By Dr. W. T. Harris.—THE RELATION OF METAPHYSICS TO EPISTEMOLOGY. By D. G. Ritchie.—GERMAN KANTIAN BIBLIOGRAPHY. By Dr. Erich Adickes.—BOOK REVIEWS. (Boston, New York, Chicago: Ginn & Co.)

In *The Philosophical Review*, also Mr. D. G. Ritchie criticises the positions of Professor Seth, who as it is well known argues for the separation of the disciplines of epistemology, psychology, logic, and so forth. Mr. Ritchie says that epistemology is nothing but a part of logic, and that it is only because of the wretchedly limited sense in which the term "logic" has come to be used that there is any excuse for a separate term for the philosophical investigation of the conditions of knowledge. Every phase of this discussion is interesting.

## THE AMERICAN JOURNAL OF PSYCHOLOGY. Vol. VI. No. 2.

RYTHM. By Thaddeus L. Bolton.—MINOR STUDIES FROM THE PSYCHOLOGICAL LABORATORY OF CORNELL UNIVERSITY. By E. B. Titchener.—AN EXPERIMENTAL STUDY OF SOME OF THE CONDITIONS OF MENTAL ACTIVITY. By John A. Bergström.—A NEW ILLUSION FOR TOUCH AND AN EXPLANATION FOR THE ILLUSION OF DISPLACEMENT OF CERTAIN CROSS LINES IN VISION. By F. B. Dresslar.—PSYCHIC EFFECTS OF THE WEATHER. By J. S. Lemon.—A NEW AND SIMPLE METHOD FOR COMPARING THE PERCEPTION OF RATE OF MOVEMENTS IN THE DIRECT AND INDIRECT FIELD OF VISION. By F. B. Dresslar.—PSYCHOLOGICAL LITERATURE. (Worcester, Mass.: J. H. Orpha.)

## THE NEW WORLD. Vol. II, No. 8.

THE BABYLONIAN EXILE. By Julius Wellhausen.—THE PECULIARITIES OF JOHN'S THEOLOGY. By George B. Stevens.—PLATO'S CONCEPTION OF THE GOOD LIFE. By Bernard Bosanquet.—THE NEW SOCIALISM AND ECONOMICS. By William B. Weeden.—THE RELIGION OF THE CHINESE PEOPLE. By C. De Harlez.—THE ETHICS OF CREDITS. By Alfred Momerie.—HERESY IN ATHENS IN THE TIME OF PLATO. By F. B. Tarbell.—THE ETHICAL AND RELIGIOUS IMPORT OF IDEALISM. By May Sinclair.—THOROUGHNESS IN THEOLOGY. By Richard A. Armstrong.—THE PARLIAMENT OF RELIGIONS. By C. H. Toy.—BOOK REVIEWS. (Boston: Houghton, Mifflin & Co.)

## INTERNATIONAL JOURNAL OF ETHICS. Vol. IV. No. 2.

THE RELATION OF ETHICS TO JURISPRUDENCE. By John Grier Hibben.—MORAL SCIENCE AND THE MORAL LIFE. By J. S. Mackenzie.—THE SOCIAL MINISTRY OF WEALTH. By Henry C. Adams.—AN ASPECT OF OLD AGE PENSIONS. By M. J. Farrelly.—ITALY AND THE PAPACY. By Raffaele Mariano.—DISCUSSIONS.—BOOK REVIEWS. (Philadelphia: International Journal of Ethics, 118 S. Twelfth Street.)

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE.  
Vol. XVIII. No. 1.

DAS ERKENNTNISSTHEORETISCHE ICH UND DER NATÜRLICHE WELTBEGRIFF. By R. Willy.—ANMERKUNG ZU DER VORSTEHENDEN ABHANDLUNG. By R. Averarius.—EINIGES ZUR GRUNDELGUNG DER SITTENLEHRE. (Second Article.)

By J. Petzoldt.—WERTHTHEORIE UND ETHIK. (Fifth Article.) By Chr. Ehrenfels.—ZUR FRAGE ÜBER DIE FREIHEIT DES WILLENS. (Concluded.) By F. Swereff. (Leipsic: O. R. Reisland.)

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNESORGANE. Vol. VI. Nos. 4, 5, and 6.

EXPERIMENTELLE BEITRÄGE ZUR UNTERSUCHUNG DES GEDÄCHTNISSES. (Concluded.) By G. E. Müller and F. Schumann.—BEITRÄGE ZUR THEORIE DER PSYCHISCHEN ANALYSE. By A. Meinong.

BEITRÄGE ZUR THEORIE DER PSYCHISCHEN ANALYSE. (Concluded.) By A. Meinong.—DIE MONOCHROMATISCHEN ABERRATIONEN DES MENSCHLICHEN AUGES. By M. Tscherning—LITTERATURBERICHT. (Hamburg and Leipsic: Leopold Voss.)

ZEITSCHRIFT FÜR PHILOSOPHIE UND PHILOSOPHISCHE KRITIK; Vol. CIII. Nos. 1 and 2.

UEBER DIE LETZTEN FRAGEN DER ERKENNTNISTHEORIE UND DEN GEGENSATZ DES TRANSCENDENTALEN IDEALISMUS UND REALISMUS. (First Article.) By Dr. Edm. Koenig.—DIE PHILOSOPHISCHEN SCHRIFTEN DES NIKOLAUS CUSANUS. By Dr. Joh. Uebinger.—UEBER DEN BEGRIFF DER ERFAHRUNG, MIT RÜCKSICHT AUF HUME UND KANT. By Robert Schellwien.

FR. JODL'S VORTRAG ÜBER DAS NATURRECHT. By Ed. Hölder.—RELIGIONSPHILOSOPHISCHES. By Theobald Ziegler.—ZUR AESTHETIK DER METAPHER. By G. Kohfeldt.—ZUR ERINNERUNG AN HERMANN ULRICI. By E. Grüneisen (Halle).—RECENSIONEN. (Leipsic: C. E. M. Pfeffer.)

REVUE PHILOSOPHIQUE. Vol. XVIII. No. 12. Vol. XIX. Nos. 1 and 2.

LA LOGIQUE SOCIALE DES SENTIMENTS. By G. Tarde.—SUR L'INDÉTERMINATION GÉOMÉTRIQUE DE L'UNIVERS. By Calinon.—LES LABORATOIRES DE PSYCHOLOGIE EXPÉRIMENTALE EN ALLEMAGNE. By V. Henri.

L'ABUS DE L'INCONNAISSABLE ET LA RÉACTION CONTRE LA SCIENCE.—II. LA PHILOSOPHIE DE LA CONTINGENCE. By A. Fouillée.—OBSERVATIONS SUR LA FAUSSE MÉMOIRE. By Dugas.—JACOB ET LE SPINOSISME. By Lévy-Bruhl.

HISTOIRE D'UNE IDÉE FIXE. By Janet (Pierre).—L'INERTIE MENTALE ET LA LOI DU MOINDRE EFFORT. By G. Ferrero. (Paris: Félix Alcan.)

Professor Delbœuf's articles on physical and geometric space, raising the problem of similar worlds, (see the previous numbers of the *Revue Philosophique* and also the last number of *The Monist*,) seem to have attracted considerable attention among the savants of Europe. M. Delbœuf received numerous private criticisms of his position. Remarks in refutation of it appeared in *Nature*; and in the January (1894) number of the *Revue Philosophique* a rather lengthy examination of his thesis by M. Lechalas appears, appended to which is the answer of Professor Delbœuf. Other criticisms may be expected in subsequent numbers.

It would seem from M. Henri's article on the "Laboratories of Experimental Psychology in Germany" in the December (1893) number of the *Revue Philosophique* that of the thirty laboratories of this science which exist in the world, sixteen, or more than half, are American.

APPENDIX TO "THE MONIST," VOL. 4, NO. 3.

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THE  
DAWN OF A NEW RELIGIOUS ERA

BY

DR. PAUL CARUS

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CHICAGO  
THE OPEN COURT PUBLISHING COMPANY

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## THE DAWN OF A NEW RELIGIOUS ERA.

THE Parliament of Religions, which sat in Chicago from September 11 to September 27, was a great surprise to the world. When the men who inaugurated it invited representatives of all the great religions of the earth to meet in conference, their plan was looked upon with misgiving, if not with ridicule. The feasibility and the advisability of their undertaking were doubted. The greatest and most powerful churches, it was said, would not be represented. The Vatican, for instance, regards the Roman Catholic Church as the only soul-saving power, with exclusive authority to loose or bind. To allow a comparison between it and other churches on a footing of equality, to appeal to reason, to provoke and favor such an appeal, or to submit to a decision after argument, would be tantamount to the recognition of reason, or logic, or science, as a higher and the highest test of truth. Like reasons, it was thought, would more or less influence other denominations, for almost all of them claim to be based upon a special divine revelation which is above argument, so as to render the mere doubt of it sin.

In spite of all these doubts and fears, the Parliament of Religions was convened, and it proved an ex-

traordinary success. The work grew rapidly under the hands of its promoters, so that the time originally allotted to it had to be increased until it extended over seventeen days. Although discussion had been excluded from the programme so as to avoid friction, it could not be entirely controlled. Nevertheless a good spirit presided over all the sessions, so that criticism promoted a closer agreement and united men of different faiths more strongly in bonds of mutual respect and toleration. The multitudes that filled the halls at the closing session were animated with a feeling that the Parliament had not lasted long enough, that a movement had been inaugurated which was as yet only a beginning that needed further development, and that we should stay and continue the work, until the mustard-seed we were planting should become a tree under whose branches the birds of the heavens might find a dwelling-place.

The idea of holding a parliament of religions is not new. It was proposed and attempted on a smaller basis in former times by Asiatic rulers. It has been predicted and longed for by men of different races and various religions. Of European authors we may mention Volney who in his "Ruins" describes minutely how "men of every race and every region, the European in his short coat, the Asiatic in his flowing robes, the African with ebony skin, the Chinese dressed in silk, assemble in an allotted place to form a great religious congress."

It is certain that similar ideas have stirred the hearts of many. The Shinto High Priest of the Japanese State Church, the Rt. Rev. Reuchi Shibata in one of his speeches said: "Fourteen years ago I expressed in my own country the hope that there would be a

friendly meeting of the world's religionists, and now I realise my hope with great joy in being able to attend this phenomenal congress."

It is but natural that this sentiment should prevail in Japan where three religions, which closely considered are by no means compatible, exist peacefully side by side. The ancient nature worship of Shinto was not exterminated when the doctrines of Confucius were preached and accepted, and the Buddhists wage no war on either. Many families of Japan conform to the official ceremonies of Shinto ; they even respect its popular superstitions, and have their children taught the precepts of the great Chinese sage as set forth in the book of rites and other sacred writings, while they themselves seek consolation for the deeper yearnings of their souls in the wisdom of Buddha. There are for these three religions shrines side by side in their homes and in their hearts.

All uncertainty as to the feasibility of the gathering vanished when the Roman Catholic Church most cordially accepted the invitation to take part. "We, as the mother of all Christian churches," said Bishop Keane, in his extemporaneous and unpublished farewell address, "have a good right to be represented. Why should we not come?" And nearly all the other denominational representatives thought as he did. Whether or not it was consistent with traditional orthodoxy, they came none the less. So powerful was the desire for a religious union, representatives of the broadest as well as of the narrowest views met in fraternal co-operation on the same platform. You could see such an evangelist as Joseph Cook sitting by the side of liberal clergymen, such as Jenkin Lloyd Jones, of Chicago, and E. L. Rexford, of Boston. And these

Christians again exchanged cordial greetings with the pagan Hindus and the atheistic Buddhists ; an unprecedented spectacle !

And it was a spectacle in the literal sense of the word. In accord with American simplicity, the men of this country appeared in their every-day attire and our European guests wisely followed their example. Nevertheless, the sight was often picturesque. Cardinal Gibbons, when he delivered the prayer at the opening of the first public session, wore his official crimson robes. The prelates of the Greek Church, foremost among them the Most Rev. Dionysios Latas, Archbishop of Zante, looked very venerable in their sombre vestments and Greek cylindrical hats. The Shinto High Priest Shibata was dressed in a flowing garment of white, decorated with curious emblems, and on his head was a strangely-shaped cap wrought apparently of black jet, from the top of which nodded mysteriously a feather-like ornament of unknown significance. Pung Quang Yu, a tall and stout man, an adherent of Confucius, and the authorised representative of the Celestial Empire, appeared in Chinese dress. There were present several Buddhist bishops of Japan, in dress which varied from violet to black. The turbaned Hindu monk, Swami Vivekananda, in a long, orange gown, who, as we were informed, lived in voluntary poverty so that as a rule he did not know where he would receive his next day's meal ; Dharmapāla, the Ceylonese Buddhist, in his robe of white ;—these and many more were the exceedingly interesting men who appeared upon the stage and spoke their minds freely on subjects over which in former ages cruel wars were waged. Differences not only of religious opinions but also of races were represented in

the Congress. Bishop B. W. Arnet, of the African Methodist Episcopal Church, confessed that the brotherhood of man had for the first time been taken seriously. When introduced, he said, "I am to represent the African, and have been invited to give color to the Parliament of Religions." Interrupted by a storm of merriment, he continued, "But I think the Parliament is already very well colored, and if I have eyes, I think the color is this time in the majority."

The Parliament of Religion was, I repeat, a great spectacle; but it was more than that. There was a purport in it. It powerfully manifested the various religious yearnings of the human heart, and all these yearnings exhibited a longing for unity and mutual good understanding. How greatly they mistake who declare that mankind is drifting toward an irreligious future! It is true that people have become indifferent about theological subtleties, but they still remain and will remain under the sway of religion; and the churches are becoming more truly religious, as they are becoming less sectarian.

There are two kinds of Christianity. One is love and charity; it wants the truth brought out and desires to see it practically applied in daily life. It is animated by the spirit of Jesus and tends to broaden the minds of men. The other is pervaded with exclusiveness and bigotry; it does not aspire through Christ to the truth; but takes Christ, as tradition has shaped his life and doctrines, to be the truth itself. It naturally lacks charity and hinders the spiritual growth of men. The latter kind of Christianity has always been looked upon as the orthodox and the only true Christianity. It has been fortified by Bible passages, formulated in *Quicunque*, indorsed by decisions of œcumenical councils

and by papal bulls. Tracts privately distributed among the visitors to the Congress contained quotations such as, "Though we or an angel from heaven preach any other Gospel unto you than that we have preached unto you, let him be accursed"; and "He that believeth not shall be condemned." Without using the same harsh terms, Saint Peter expressed himself not less strongly, in a speech before the Jews concerning Jesus of Nazareth, saying: "Neither is there salvation in any other: for there is none other name under the heaven given among men whereby we must be saved."

There were a few voices heard at the Parliament of Religions which breathed this narrow and so-called orthodox Christianity, but they could hardly be regarded as characterising the spirit of the whole enterprise. They really served as a contrast by which the tolerant principles of our Oriental guests shone the more brightly. "The Hindu fanatic," said Vivekananda, "burns himself on the pyre, but he never lights the fagots of an Inquisition"; and we were told that Buddha said to his disciples, "I forbid you to believe anything simply because I said it." Even Mohammedanism, generally supposed to be the most authoritative of all religions, appeared mild and rational as explained by Mohammed Alexander Russell Webb. Mr. Webb said: "The day of blind belief has passed away. Intelligent humanity wants a reason for every belief, and I say that that spirit is commendable and should be encouraged, and it is one of the prominent features of the spirit of Islam." At one of the meetings a prayer was offered for those blind heathen who attended the Congress, that God might have mercy on them and open their eyes, so that they would see their own errors and accept the truth of Christianity; but

the prayer, made in the spirit of the old bigoted Christianity which believes in the letter and loses the spirit, found an echo neither in the hearts of our foreign guests nor among the men who had convened the Congress nor among the audience who listened to the prayer. Far from being converted, the heathen delegates took the opportunity of denouncing Christian missionaries for their supercilious attitude and for making unessential things essential. For instance, the missionaries, they said, demand that the Hindus abolish caste, and treat the refusal to eat meat as a pagan prejudice, so that in the Hindu mind "Christian" has come to mean "carnivorous." One of the delegates, a Brahman layman, said: "With the conqueror's pride they cannot bring themselves down, or rather cannot bring themselves up to practise the humility which they preach." B. B. Nagarkar, of Bombay, expressed himself more guardedly. Said he :

"Sad will be the day for India when Christian missionaries cease to come; for we have much to learn about Christ and Christian civilisation. They do some good work. But if converts are the measures of their success, we have to say that their work is a failure. Little do you dream that your money is expended in spreading abroad nothing but Christian dogmatism, Christian bigotry, Christian pride, and Christian exclusiveness. I entreat you to expend one-tenth only of your vast sacrifices in sending out to our country unsectarian, broad missionaries who will devote their energy to educating our men and women. Educated men will understand Christ better than those whom you convert to the narrow creed of some cant Christianity."

The severest rebuke came from the lips of the representative of Jainism, and from the monk Vivekananda. The latter denounced Christian missionaries for offering stones instead of bread. They build churches, he said, and preach sectarian creeds which

benefit no one. They despise the sacred traditions of the Hindu, the profundity of which they are unable to fathom ; and, he added, "What shall we think of a religion whose missionaries distribute food in a famine to the starving people on the condition of conversion?"

These were hard reproaches, yet they were accepted by the Christians with good grace.\* The Rev. R. G. Hume of India said, "We are willing to have our Bud-

\* This passage was much commented upon in various newspapers and religious journals, and it appears that the writer's attitude has been misunderstood.

That several hard reproaches "were accepted by the Christians with good grace" is not a slight, not a rebuke, but a praise. It is very doubtful whether a Mohammedan or any other but a Christian audience would have been so patient as to listen good-naturedly to similar censures. Forbearance is always a symptom of strength. None but the strong can afford to be generous and tolerant. Compare p. 18, lines 13-18 of this article.

Among the comments that came to our notice the *National Baptist* of November 23 discusses Vivekananda's statement under the caption, "A False Accusation." Dr. S. W. Duncan writes: "I hope Bishop Keane's denunciation was honest and not a covert fling at Protestants, . . . I suspect if the Hindu monk had told the whole truth, all he knew, he would have been compelled to mention by name Roman Catholics. Dr. Bunker has recently given me instances of his being frustrated in his work by Catholic priests preceding him in heathen villages, and buying up the chiefs, giving them money and other considerations of weight with heathen, for their acceptance of crucifixes and Romish rites and enrollment as Catholics. I have made inquiry, and there is not on record a single intimation that any one of our missionaries has ever thus abused his holy calling."

We have a good opinion of Baptist missions, and know at the same time that Roman Catholic missionaries, among them the much-reviled Jesuits, have shown an admirable devotion to the cause of their religion.

Supposing Vivekananda's accusation to be true of some Christian missionaries, we do not take it to mean a wholesale condemnation of all. Nor do we wish to pour cold water upon the missionary zeal. The missionary spirit is the index of the spiritual life of a religion, and we are glad to see it in Buddhists not less than in Christians. But we are sorry that the broad religious spirit which pervaded the Parliament and is present among the Unitarians and other liberal institutions, is too weak to undertake any great propaganda for their cause. How much more effective would Christian missionaries be if they taught religion instead of dogmas, and love of truth instead of blind faith.

*The Louisville Record* of November 30 calls Vivekananda's statement slander, and adds: "When will we get over the harm done by the World's Parliament of Religions?" This reminds us of the parable of the sower, where Christ says: "Some [seeds] fell upon stony ground."

dhistic and Brahman friends tell us how we can do better. Any one who will help us to be more humble and more wise will do us good and we will thank him whoever he be." And Bishop Keane, Rector of the Roman Catholic University at Washington, was not lacking in this broad religious spirit. "I indorse," said the Bishop, impressively, "the denunciation hurled against the system of pretended charity that offered food to the hungry Hindus at the cost of their conscience and their faith. It is a shame and disgrace to all who call themselves Christians. And if Vivekananda by his criticism can only stir us and sting us into better teachings and better doings in the great work of Christ, I for one shall be profoundly grateful to our friend the great Hindu monk."

This is the true catholicity of the religion of mankind, and coming from the lips of a Roman Catholic bishop, it did not fail to find a joyous and powerful response in the audience. To the honor of our Hindu friends we have to add that the fairness and impartial love of justice with which their remarks were accepted by a Christian audience, as well as by their Christian brethren on the platform, were unhesitatingly recognised. Said one of them, "The tolerance, the kindness, nay, the patience with which you listen to the enumeration of your faults, this sympathy with the wrong done to heathendom by Christianity, makes me believe that we have all advanced and are advancing wonderfully."

Heretofore, the broad Christianity has always been regarded as heretical; but as this Parliament proves, times have changed. Judging from what we witnessed at Chicago, the official representatives of almost all religions speak a new language. The narrowness of past

ages is now felt to be due to imperfect views of the truth, and we recognise the duty to pass beyond it to a higher and grander conception. There are still representatives of the narrow spirit left, but their position becomes more and more untenable. What does it matter that previous oecumenical councils did not stand upon a broad platform? Does not religion grow? Was the present Parliament of Religions not oecumenical? And has the holy spirit of religious progress ceased to be a presence in mankind? If ever any council was oecumenical, it was this gathering at Chicago; and although no resolutions were passed, there were a certain harmony in matters of faith and a consciousness of that which is essential, such as were never manifested before.

The narrow Christianity will disappear, for its errors have become palpable. There are still remaining some prophets of the trust in a blind faith, but their influence is on the wane. Liberals are inclined to suspect the motives of the believers in the letter, but they judge without charity. The narrow-minded Christian dogmatists are neither false nor hypocritical, for we have ample evidence of their earnestness and their simple-minded piety. Yet they are mistaken. They are deficient in insight and they lack in understanding. We shall have to educate them and teach them that the gentle spirit of Christ is not with them, but marches on with the progressive part of mankind to the planes of a higher evolution.

We all of us have learned much during these congresses. Our foreign guests have learned to know Christianity better than it appeared to them in the conduct of Christians and in sermons and Sunday-schools, and we in turn have learned to respect not only the

love of truth and earnestness of pagans, but also their philosophical capacity.

The narrow Christianity was represented by a few speakers and the audience endured them with great patience ; but we can fairly ignore them here ; for there is no need of reviewing or recapitulating sermons which every one who desires can enjoy in our various orthodox churches. Dr. Briggs represented progressive theology and insisted that religion must face the criticism of science. The Rev. Mr. Mozoomdar is the leader of a similar movement in India. The Brahmo Somaj, which he and the able Secretary of the Association, Mr. B. B. Nagarkar of Bombay, represented, may be characterised as Hindu Unitarianism. Max Müller and Henry Drummond sent brief papers which showed the warm sympathy of the authors and their substantial agreement with the spirit of the Parliament of Religions.

It is impossible to analyse the details of the various views presented ; but a few quotations from the speeches of our heathen friends whom we had not the pleasure of meeting before, will not be out of place.

Vivekananda explained the central idea of the Vedas as follows :

" I humbly beg to differ from those who see in monotheism, in the recognition of a personal God apart from nature, the acme of intellectual development. I believe it is only a kind of anthropomorphism which the human mind stumbles upon in its first efforts to understand the unknown. The ultimate satisfaction of human reason and emotion lies in the realisation of that universal essence which is the All. And I hold an irrefragable evidence that this idea is present in the Veda, the numerous gods and their invocations notwithstanding. This idea of the formless All, the Sat, i. e., *esse*, or Being called Ātman and Brahman in the Upanishads, and further explained in the Darsanas, is the central idea of the Veda, nay, the root idea of the Hindu religion in general."

On another occasion the same speaker dwelt on the idea of this panentheism with reference to the soul. Though recognising law in the world, he repudiated materialism. The soul has tendencies, he said, and these tendencies have been caused by past actions in former incarnations. Science explains everything by habits, and habits are acquired by repetition. That we do not remember the acts done in our previous states of existence is due to the fact that consciousness is the surface only of the mental ocean, and our past experiences are stored in its depths. The wheel of causation rushes on, crushing everything in its way, and waits not for the widow's tear or the orphan's cry. Yet there is consolation and hope in the idea that the soul is immortal and we are children of eternal bliss. The Hindu refuses to call men sinners; he calls them "children of immortal bliss." Death means only a change of centre from one body to another. He continued :

"The Vedas proclaim, not a dreadful combination of unfor-giving laws, not an endless prison of cause and effect, but that, at the head of all these laws, in and through every particle of matter and force, stands One through whose command the wind blows, the fire burns, the clouds rain, and death stalks upon the earth. And what is his nature? He is everywhere, the pure and formless one, the Almighty and the All-merciful. 'Thou art our Father, thou art our mother, thou art our beloved friend, thou art the source of all strength. Thou art He that beareth the burdens of the universe; help me bear the little burden of this life.' Thus sang the Rishis of the Veda. And how to worship him? Through love. 'He is to be worshipped as the one beloved, dearer than everything in this and in the next life.' "

The breadth of Vivekananda's religious views appeared when he said :

"The same light shines through all colors, and in the heart of everything the same truth reigns. The Lord has declared to the

Hindu in his incarnation as Krishna, 'I am in every religion, as the thread through a string of pearls, and wherever thou seest extraordinary holiness and extraordinary power raising and purifying humanity know ye that I am there.'

Parseeism, the noble religion of Zarathustra, received scholarly treatment by Jinanji Jamshedji Modi who repudiated its dualism and represented it as pure monotheism, while he satisfactorily explained the symbolism of the sacred fire. In this way almost every religion was raised to a higher standpoint, than it is usually understood to have, by its representatives, and even idolatry found adroit champions in the Congress.

Said Vivekananda :

"It may be said without the least fear of contradiction that no Indian idolator, as such, believes the piece of stone, metal, or wood before his eyes to be his god in any sense of the word. He takes it only as a symbol of the all-pervading Godhood, and uses it as a convenient object for purposes of concentration, which being accomplished, he does not hesitate to throw it away."

Prince Momolu Massaquoi, son of a native king from the Wey Territory of the West Coast of Africa, a fine-looking youth of good education, which he had received in an American college after his conversion to Christianity, spoke in the same way with Vivekananda concerning the idolatry of African natives.

Mohammedanism, in addition to its representation by Moslems, was critically reviewed by the Rev. George Washburn, President of Robert College, Constantinople, who showed its points of contact and disagreement with Christianity. He quoted passages from the Koran which, in contrast to Mr. Webb's exposition, prove the exclusiveness of Mohammed's religion. The third sura, for instance, declares :

"Whoever followeth any other religion than Islam, shall not be accepted, and at the last day he shall be of those that perish!"

Dr. Washburn's quotation from the Koran reminds us of similar passages in the New Testament; the old orthodoxy of the Moslems, however, is giving way to broader views. *Tout comme chez nous!* Dr. Washburn quoted the following Mohammedan hymn, composed by Shereef Hanoom, a Turkish lady of Constantinople, and translated by the Rev. H. O. Dwight, which reminds us strongly of our best modern Christian poetry:

"O source of kindness and of love,  
O give us aid or hopes above,  
'Mid grief and guilt although I grope,  
From thee I'll ne'er cut off my hope,  
My Lord, O my Lord !

"Thou King of Kings, dost know my need,  
Thy pardoning grace, no bars can heed ;  
Thou lov'st to help the helpless one  
And bid'st his cries of fear be gone,  
My Lord, O my Lord !

"Shouldst thou refuse to still my fears,  
Who else will stop to dry my tears ?  
For I am guilty, guilty still,  
No other one has done so ill,  
My Lord, O my Lord !

"The lost in torment stand aghast,  
To see this rebel's sins so vast ;  
What wonder, then, that Shereef cries  
For mercy, mercy, ere she dies,  
My Lord, O my Lord !"

Prof. Minas Tchéraz, an Armenian Christian, when sketching the history of the Armenian Church, said sarcastically that real Mohammedanism was quite different from the Islam represented by Mr. Webb. This may be true, but Mr. Webb might return the compliment and say that true Christianity as it showed itself in deeds such as the Crusades, is quite different from

that ideal which its admirers claim it to be. Similar objections, that the policy of Christian nations showed very little the love and meekness of Jesus, were indeed made by Mr. Hirai, a Buddhist of Japan. We Christians have reason enough to be charitable in judging others.

Buddhism was strongly represented by delegates from Ceylon, Siam, and Japan. H. R. H. Chandradat Chudhadharn, Prince of Siam, sent a paper which contained a brief exposition of Buddhistic principles. There are four noble truths according to Buddha. These are (1) the existence of suffering ; (2) the recognition of ignorance as the cause of suffering ; (3) the extinction of suffering by the cessation of the three kinds of lust arising from ignorance ; and (4) the eight paths that lead to the cessation of lust. These eight paths constitute the way of salvation and are (1) right understanding ; (2) right resolutions ; (3) right speech ; (4) right acts ; (5) the right way of earning a livelihood ; (6) right efforts ; (7) right meditation ; and (8) the right state of the mind. The Japanese Buddhists are men of philosophical depth and genius, and might have made a deeper impression than they did if they had been more familiar with Western thought. They left, however, behind them a number of pamphlets for free distribution by the Bukkyo Gakkai, a society at Tokio whose sole purpose is the propagation of Buddhism.\* The missionary zeal of the Japa-

\* These are the titles of the Japanese missionary tracts in my possession : *Outlines of the Mahayana as taught by Buddha*, by S. Kuroda, Superintendent of Education of the Jodo-Sect; *The Sutra of Forty-two Sections and Two Other Short Sutras*, translated from the Chinese originals (The Buddhist Propagation Society: Kyoto, Japan, 1892); *A Shin-Shiu Catechism*, by S. Kato of the Hongwanjiha of the Shin-Shiu sect of Japan (The Buddhist Propagation Society, Kyoto, Japan, 1893); *The Skeleton of a Philosophy of Religion*, by the Rev. Prof. M. Tokunaga, translated by Zenshiro Noguchi (Tokio, Kawai Bunkodo

nese Buddhists shows that there is life in Buddhism. The Rt. Rev. Ashitsu concluded his article on the teachings of Buddha with the following words :

" You know very well that our sunrise island of Japan is noted for its beautiful cherry-tree flowers. But you do not know that our country is also the kingdom where the flowers of truth are blooming in great beauty and profusion at all seasons. Visit Japan, and do not forget to take home with you the truth of Buddhism. All hail the glorious spiritual spring-day, when the song and odor of truth invite you all out to our country for the search of holy paradise!"

One quotation from the Japanese missionary tracts will suffice to prove that the ancient teachings of Gautama are still preserved among his adherents of the present generation of Japan. In "The Sutra of Forty-two Sections" we read on page 3 :

" Buddha said : If a man foolishly does me wrong, I will return to him the protection of my ungrudging love. The more evil comes from him, the more good shall go from me. The fragrance of goodness always comes to me, and the harmful air of evil goes to him. . . .

" Buddha said : A wicked man who reproaches a virtuous one is like one who looks up and spits at heaven ; the spittle soils not the heaven, but comes back and defiles his own person. So again, he is like one who flings dust at another when the wind is contrary, the dust will return to him who threw it. The virtuous man cannot be hurt, and the misery that the other would inflict falls back on himself."

The Parliament of Religions is undoubtedly the most noteworthy event of this decade. What are the World's Fair and its magnificent splendor in comparison with it? Or what the German Army Bill, the Irish

& Co., 1893); *Outlines of the Doctrine of the Nichiren Sect*, by Nissatsu Arai, the lately lamented Dai-sōjō. With the life of Nichiren, the founder of the Nichiren Sect, edited by the Central Office of the Nichiren Sect, Tokio, Japan, A. D. 1893.

Home Rule Bill in England and its drastic episodes in the House of Parliament, or a change of party in the United States? It is evident that from its date we shall have to begin a new era in the evolution of man's religious life.

It is difficult to understand the pentecost of Christianity which took place after the departure of Christ from his disciples. But this Parliament of Religions was analogous in many respects, and it may give us an idea of what happened at Jerusalem nearly two thousand years ago. A holy intoxication overcame the speakers as well as the audience; and no one can conceive how impressive the whole proceeding was, unless he himself saw the eager faces of the people and imbibed the enthusiasm that enraptured the multitudes.

Any one who attended these congresses must have felt the thrill of the divine spirit that was moving through the minds of the congregation. We may rest assured that the event is greater than its promoters ever dreamed of. They builded better than they knew. How small are we mortal men who took an active part in the Parliament in comparison with the movement which it inaugurated! And this movement indicates the extinction of the old narrowness and the beginning of a new era of broader and higher religious life.

It is proposed that another Parliament of Religions be convened in the year 1900 at the ancient city of Bombay, where we may find a spiritual contrast between the youngest city and the oldest, and pay a tribute from the daughter to the mother. Other appropriate places for Religious Parliaments would be Jerusalem, the Holy City of three great religions, or some port of Japan where Shintoism, Confucianism, Buddhism, and Christianity peacefully develop side by

side, exhibiting conditions which invite a comparison fair to all?

Whether or not the Parliament of Religions be repeated, whether or not its work will be continued,\* the fact remains that this congress at Chicago will exert a lasting influence upon the religious intelligence of mankind. It has stirred the spirits, stimulated mental growth, and given direction to man's further evolution. It is by no means an agnostic movement, for it is carried on the wings of a religious faith and positive certainty. It is decidedly a child of the old religions, and Christianity is undoubtedly still the leading star. That the faults of Christianity have been more severely rebuked than those of any other religion should not be interpreted to mean that the others are in every respect better, for the censure is but a sign that points to the purification of Christianity. The dross is discarded, but the gold will remain.

The religion of the future, as the opinions presented indicate, will be that religion which can rid itself of all narrowness, of all demand for blind subordination, of the sectarian spirit, and of the Phariseeism which takes it for granted that its own devotees alone are good and holy, while the virtues of others are but polished vices. The religion of the future cannot be a creed upon which the scientist must turn his back, because it is irreconcilable with the principles of science. Religion must be in perfect accord with science; for

\* It may be well to add, and those who are interested in the religious development of mankind may be glad to know, that the work of the Parliament of Religions may be continued. Under Mr. Bonney's direction a local committee has been formed among the members of which are Dr. Thomas, Dr. Gilbert, Dr. Dellano, Mr. M. M. Snell, Mrs. Harbert, and the writer of this article. The committee is in connexion with advisory councils all over the world, and it has been decided to name the new movement "The World's Religious Parliament Extension."

science—and I mean here not the private opinions and hypotheses of single scientists—is not an enterprise of human frailty. Science is divine, and the truth of science is a revelation of God. Through science God speaks to us; by science he shows us the glory of his works; and in science he teaches us his will.\*

"We love science," said a Catholic priest, of Paris, at one of the sessions in the scientific section, when protesting against a thoughtless remark of a speaker who broadly accused the clergy of being opposed to science. "We love science," Father D'Arby said, emphatically; "the office of science in religion is to prune it of fantastic outgrowths. Without science religion would become superstition."

The human soul consists of two elements, self and truth. Self is the egotistical desire of being some independent little deity, and truth is the religious longing for making our soul a dwelling-place of God. The existence of self is an illusion; and there is no wrong in this world, no vice, no sin except what flows from the assertion of self. Truth has a wonderful peculiarity: it is inexhaustible, and it, likewise, demands a constantly renewed application. An increase of knowledge involves always an increase of problems that entice the inquiring mind to penetrate deeper and deeper into the mysteries of being, and however serious and truth-loving we may have been, there is always occasion to be more faithful in the attendance to our obligations and daily duties. Self shrivels our hearts; truth makes them expand; and the ultimate aim of re-

\* This view of a religion of science was presented by the writer before the Parliament in an address entitled *Science a Religious Revelation* (published in pamphlet form by the Open Court Publishing Co.)

ligion is to eliminate self and let man become an embodiment of truth, an incarnation of God.

We must welcome the light from whatever source it comes, and we must hail the truth wherever we find it. There is but one religion, the religion of truth. There is but one piety, it is the love of truth. There is but one morality, it is the earnest desire of leading a life of truth. And the religion of the future can only be the Religion of Truth.





Very truly,  
Geo. J. Romanus.